Scott

Module AB 266

Application

Wheelabrator North Broward Waste-to-Energy Facility

AIR CONSTRUCTION PERMIT APPLICATION

Project 1112120 - 017 - AC

Submitted For:

Wheelabrator North Broward, Inc.
2600 Wiles Road
Pompano Beach, FL 33073

Submitted By:

Golder Associates Inc.
6026 NW 1st Place
Gainesville, FL 32607 USA

Distribution: **4 Copies — FDEP**
2 Copies — Wheelabrator North Broward, Inc.
2 Copies — Golder Associates Inc.

February 2014

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Golder Associates

APPLICATION FOR AIR PERMIT – LONG FORM

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Wheelabrator North Broward, Inc.**	
2. Site Name: **Wheelabrator North Broward Waste-to-Energy Facility**	
3. Facility Identification Number: **0112120**	
4. Facility Location... Street Address or Other Locator: **2600 Wiles Road** City: **Pompano Beach** County: **Broward** Zip Code: **33073**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **Chuck Faller, Florida Regional Environmental Manager**
2. Application Contact Mailing Address... Organization/Firm: **Wheelabrator North Broward, Inc.** Street Address: **2600 Wiles Road** City: **Pompano Beach** State: **FL** Zip Code: **33073**
3. Application Contact Telephone Numbers... Telephone: **(954) 971-8701** ext. **216** Fax: **(954) 971-8703**
4. Application Contact E-mail Address: **cfaller@wm.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 2-12-14	3. PSD Number (if applicable):
2. Project Number(s): 0112120-017-AC	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

☒ Air construction permit.

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

☐ Initial Title V air operation permit.

☐ Title V air operation permit revision.

☐ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This application requests a phased approach to the use up to 15% biosolids as fuel in each of the 3 MWC units. This request is for the initial use of 5% biosolids fired with MSW at which time compliance tests will be performed. After successful demonstration of compliance, the percent of biosolids can be increased at 5% increments to allow compliance tests. Upon demonstration of compliance in any MWC unit at each 5% increment, the highest percent of biosolids up to 15% is authorized.

In addition, this application includes the use of landfill gas up to supplement the MSW used as fuel. The amount of LFG is 2,700 scfm per MWC unit and 8,100 scfm for the facility.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
001	807 TPD MSW Combustor & Auxiliary Burners - Unit 1	AC1F	N/A
002	807 TPD MSW Combustor & Auxiliary Burners - Unit 2	AC1F	N/A
003	807 TPD MSW Combustor & Auxiliary Burners - Unit 3	AC1F	N/A

Application Processing Fee

Check one: ☐ Attached - Amount: $_____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Jim Epsilantis, Plant Manager
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **Wheelabrator North Broward, Inc.**
   Street Address: **2600 Wiles Road**
   City: **Pompano Beach** State: **FL** Zip Code: **33073**
3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(954) 971-8701** ext. **212** Fax: **(954) 971-8703**
4. Owner/Authorized Representative E-mail Address: **jepsilantis@wm.com**
5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.

   Jim Epsilantis — Signature

   2-10-14 — Date

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):
   - ☐ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.
   - ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
   - ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.
   - ☐ The designated representative at an Acid Rain source or CAIR source.

3. Application Responsible Official Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

4. Application Responsible Official Telephone Numbers...
   Telephone: ( ) ext. Fax: ( )

5. Application Responsible Official E-mail Address:

6. Application Responsible Official Certification:

I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

_____ _____

Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **Kennard F. Kosky**
   Registration Number: **14996**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.****
   Street Address: **6026 NW 1st Place**
   City: **Gainesville** State: **FL** Zip Code: **32607**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 336-5600** ext. **21156** Fax: **(352) 336-6603**
4. Professional Engineer E-mail Address: **kkosky@golder.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature 2/11/14 Date

(seal)

* Attach any exception to certification statement.

**Board of Professional Engineers Certificate of Authorization #00001670.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone **17** East (km) **583.541** North (km) **2907.498**		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) **26/17/12** Longitude (DD/MM/SS) **80/09/48**	
3. Governmental Facility Code: **0**	4. Facility Status Code: **A**	5. Facility Major Group SIC Code: **49**	6. Facility SIC(s): **4953**
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: **Chuck Faller, Florida Regional Environmental Manager**
2. Facility Contact Mailing Address... Organization/Firm: **Wheelabrator North Broward, Inc.** Street Address: **2600 Wiles Road** City: **Pompano Beach** State: **FL** Zip Code: **33073**
3. Facility Contact Telephone Numbers: Telephone: **(954) 971-8701** ext. **216** Fax: **(954) 971-8703**
4. Facility Contact E-mail Address: **cfaller@wm.com**

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) ext. Fax: ( )
4. Facility Primary Responsible Official E-mail Address:

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☒ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☒ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☐ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☒ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment: **MSW Combustor Units 1, 2, and 3 are subject to NSPS - 40 CFR 60, Subparts Cb and Eb.**	

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Particulate Matter Total – PM	**A**	**N**
Particulate Matter – PM10	**A**	**N**
Sulfur Dioxide – SO2	**A**	**N**
Nitrogen Oxides – NOx	**A**	**N**
Carbon Monoxide – CO	**A**	**N**
Fluoride – FL	**A**	**N**
Lead – Pb	**B**	**N**
Beryllium – H021	**B**	**N**
Cadmium – H027	**B**	**N**
Hydrogen Chloride – H106	**A**	**N**
Mercury – H114	**B**	**N**
Dioxin/Furan – DIOX	**B**	**N**

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility-Wide Cap [Y or N]? (all units)	3. Emissions Unit ID's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID:_____ ☒ Previously Submitted, Date: **06/29/10**

2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID:_____ ☒ Previously Submitted, Date: **06/29/10**

3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID:_____ ☒ Previously Submitted, Date: **06/29/10**

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location:
   ☐ Attached, Document ID:_____ ☒ Not Applicable (existing permitted facility)

2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL):
   ☒ Attached, Document ID: **Part II**

3. Rule Applicability Analysis:
   ☒ Attached, Document ID: **Part II**

4. List of Exempt Emissions Units:
   ☐ Attached, Document ID:_____ ☒ Not Applicable (no exempt units at facility)

5. Fugitive Emissions Identification:
   ☐ Attached, Document ID:_____ ☒ Not Applicable

6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.):
    ☐ Attached, Document ID:_____ ☒ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units:
   ☐ Attached, Document ID:_____ ☐ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities: (Required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☐ Not Applicable (revision application)

2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought)
   ☐ Attached, Document ID:_____
   ☐ Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)
   ☐ Attached, Document ID:_____
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____
   ☐ Equipment/Activities Onsite but Not Required to be Individually Listed
   ☐ Not Applicable

5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☐ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
   ☐ Attached, Document ID:_____ ☐ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program

1. Acid Rain Program Forms:

   Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable (not an Acid Rain source)

   Phase II NO_X Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable

   New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable

2. CAIR Part (DEP Form No. 62-210.900(1)(b)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable (not a CAIR source)

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [1]
MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   ☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

   Three (3) 807-tons per day (TPD) Municipal Solid Waste (MSW) Combustors & Auxiliary Burners.

3. Emissions Unit Identification Number: **001, 002, and 003**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:
A		**6/13, 6/23, and 7/31/1991**	**49**

8. Federal Program Applicability: (Check all that apply)

   ☐ Acid Rain Unit

   ☐ CAIR Unit

9. Package Unit:
   Manufacturer: **Babcock and Wilcox** Model Number:

10. Generator Nameplate Rating: **67.6** MW

11. Emissions Unit Comment:

    Generator nameplate rating of 67.6 MW is the facility total. All three units share a common stack containing one flue for each unit.

EMISSIONS UNIT INFORMATION
Section [1]
MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Emissions Unit Control Equipment/Method: Control 1 of 4

1. Control Equipment/Method Description:

   Spray Dryer Absorber

2. Control Device or Method Code: **202**

Emissions Unit Control Equipment/Method: Control 2 of 4

1. Control Equipment/Method Description:

   Fabric Filter High-Temperature [T > 250 degrees Fahrenheit (°F)]

2. Control Device or Method Code: **016**

Emissions Unit Control Equipment/Method: Control 3 of 4

1. Control Equipment/Method Description:

   Selective Non-Catalytic Reduction for NO_x control

2. Control Device or Method Code: **107**

Emissions Unit Control Equipment/Method: Control 4 of 4

1. Control Equipment/Method Description:

   Control of Percent Oxygen (O_2) in Combustion Air (Off-Stoichiometric Firing) for CO control (Good Combustion Control)

2. Control Device or Method Code: **033**

Emissions Unit Control Equipment/Method: Control _ of _

1. Control Equipment/Method Description:
   Activated Carbon Injection

2. Control Device or Method Code: **207**

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **2,420 TPD MSW (Monthly Average)**	
2. Maximum Production Rate: **558,000 lb/hr steam (4-hour block average)**	
3. Maximum Heat Input Rate: **907.5** million Btu/hr	
4. Maximum Incineration Rate: pounds/hr **2,420** tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8,760** hours/year

6. Operating Capacity/Schedule Comment:

All values are for the three MSW units.
Maximum process rate for each unit is 807 tons of MSW per day.
Maximum production rate for each unit is 186,000 lb/hr steam flow rate, 4-hr average.
Maximum heat input rate for each unit is 302.5 MMBtu/hr (108% rated capacity).
MSW heat content is assumed to be 4,500 Btu/lb (10,500 Kilojoules/Kg). See Permit No. 0112120-013-AV.

Maximum heat input rate and maximum incineration rates based on monthly average.

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **1 – Stack**	2. Emission Point Type Code: **1**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code:	6. Stack Height: **195** feet	7. Exit Diameter: **7.5** Feet
8. Exit Temperature: **300**°F	9. Actual Volumetric Flow Rate: **169,000** acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: **80,000** dscfm	12. Nonstack Emission Point Height: Feet	
13. Emission Point UTM Coordinates... Zone: **17** East (km): **583.891** North (km): **2907.777**	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) **26/17/14** Longitude (DD/MM/SS) **80/09/35**	
15. Emission Point Comment: **There is one common stack containing one flue for each of the three MSW combustors. Stack parameters are average values for each flue. Stack parameters based on Title V permit application dated April 2005.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 7

1. Segment Description (Process/Fuel Type): **External Combustion Boilers; Electrical Generation; Natural Gas; Boilers > 100 Million Btu/hr except Tangential**		
2. Source Classification Code (SCC): **1-01-006-01**	3. SCC Units: **Million Cubic Feet Natural Gas Burned**	
4. Maximum Hourly Rate: **0.89**	5. Maximum Annual Rate: **779.38**	6. Estimated Annual Activity Factor: **10%**
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **1,020**
10. Segment Comment: **Fuel used for auxiliary burners. Used as fuel during warm-up, startup, shutdown, and malfunctions, as well as other times when necessary and consistent with good combustion practice. Maximum hourly firing rate based on 907.5 MMBtu/hr heat input per the three units. Maximum annual firing rate based on annual activity factor of 10% operation during the year (876 hr/yr).**		

Segment Description and Rate: Segment 2 of 7

1. Segment Description (Process/Fuel Type): **External Combustion Boilers; Electrical Generation; Solid Waste; Municipal Solid Waste.**		
2. Source Classification Code (SCC): **1-01-012-01**	3. SCC Units: **Tons Solid Waste Burned**	
4. Maximum Hourly Rate: **100.83**	5. Maximum Annual Rate: **883,300**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.2**	8. Maximum % Ash: **30**	9. Million Btu per SCC Unit: **9**
10. Segment Comment: **MSW throughput limited to 807 TPD per unit (2,420 TPD total), and 907.5 MMBtu/hr for all three units as determined on a monthly average. Maximum annual rate based on the three units operating for 365 days/yr.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 7

1. Segment Description (Process/Fuel Type): **External Combustion Boilers; Electrical Generation; Distillate Oil; Grades 1 and 2 Oil**		
2. Source Classification Code (SCC): **1-01-005-01**	3. SCC Units: **1,000 Gallons**	
4. Maximum Hourly Rate: **6.48**	5. Maximum Annual Rate: **5,676.5**	6. Estimated Annual Activity Factor: **10%**
7. Maximum % Sulfur: **0.3**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **140**
10. Segment Comment: **Alternative fuel for startup burners. Maximum hourly firing rate based on 907.5 MMBtu/hr heat input per the three units. Maximum annual firing rate based on annual activity factor of 10% operation during the year (876 hr/yr).**		

Segment Description and Rate: Segment 4 of 7

1. Segment Description (Process/Fuel Type): **External Combustion Boilers; Electrical Generation; Solid Waste; Tires**		
2. Source Classification Code (SCC): **1-01-012-01**	3. SCC Units:	
4. Maximum Hourly Rate: **3.03**	5. Maximum Annual Rate: **26,499**	6. Estimated Annual Activity Factor: **Tons of tires burned**
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **The total quantity of waste tires received as segregated loads and burned at the facility limited to 3%, by weight, of the facility's total fuel. Maximum hourly rate: 0.03 x 2,420 TPD x (day/24 hr) = 3.025 tons/hr. Maximum annual rate: 0.03 x 2,420 TPD x (365/yr) = 26,499 tons/yr.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 5 of 7

1. Segment Description (Process/Fuel Type): **External Combustion Boilers; Electrical Generation; Solid Waste; non-MSW material**		
2. Source Classification Code (SCC): **1-01-012-01**	3. SCC Units: **Tons of non-MSW**	
4. Maximum Hourly Rate: **20.17**	5. Maximum Annual Rate: **176,660**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **The total quantity of the non-MSW material received as segregated loads and burned at the facility is limited to 20%, by weight, of the facility's total fuel. See Permit 0112120-015-AC.** **Maximum hourly rate: 0.20 x 2,420 TPD x (day/24 hr) = 20.17 tons/hr.** **Maximum annual rate: 0.20 x 2,420 TPD x (365/yr) = 176,660 tons/yr.**		

Segment Description and Rate: Segment 6 of 7

1. Segment Description (Process/Fuel Type): **External Combustion Boilers; Electrical Generation; Solid Waste; Biosolids**		
2. Source Classification Code (SCC): **1-01-012-05**	3. SCC Units:	
4. Maximum Hourly Rate: **15.13**	5. Maximum Annual Rate: **132,495**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: ***Biosolids usage proposed up to 15% of total heat input.*** **Maximum hourly rate: 0.15 x 2,420 TPD x (day/24 hr) = 15.13 tons/hr.** **Maximum annual rate: 0.15 x 2,420 TPD x (365/yr) = 132,495 tons/yr.**		

Segment Description and Rate: Segment 7 of 7

1. Segment Description (Process/Fuel Type): **External Combustion Boilers; Electrical Generation; Natural Gas; Boilers > 100 Million Btu/hr except Tangential**		
2. Source Classification Code (SCC): **1-01-006-01**	3. SCC Units: **Million Cubic Feet Landfill Gas Burned**	
4. Maximum Hourly Rate: **0.486**	5. Maximum Annual Rate: **4,257.4**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.069**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **450**
10. Segment Comment: **2,700 scfm per MWC, 8,100 scfm for facility.** **8,100 scfm X 60 min/hr X MM/10^6 = 0.486 MMscf/hr.** **0.486 MMscf/hr x 8,760 hr/yr = 4,257.4 MMscf/yr.**		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
CO	033		EL
DIOX	202, 016	207	EL
FL	202, 016		EL
H027 – Cadmium	202, 016		EL
H106 – Hydrogen Chloride	202		EL
H114 – Mercury	202, 016	207	EL
NOx	107		EL
Pb	202, 016		EL
PM	016	202	EL
PM10	016	202	NS
SO2	202	016	EL

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **95.4** lb/hour **417.3** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **100 ppmvd @ 7-percent O_2 (per MSW combustor unit)** Reference: **Permit No. 0112120-014-AV**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Equivalent emissions rates are 0.105 lb/MMBtu/unit, 31.8 lb/hr/unit or 139.1 tons/yr/unit (Permitting Note to Emissions Limitations and Standards, Permit No. 0112120-014-AV)

Potential Emissions for 3 units
Hourly = 31.8 lb/hr x 3 = 95.4 lb/hr
Annual = 139.1 TPY x 3 = 417.3 TPY

See Part II

11. Potential, Fugitive, and Actual Emissions Comment:
Emissions represent total for the three combustor units. See Part II

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **100 ppmvd @ 7% O_2**	4. Equivalent Allowable Emissions: **95.4** lb/hour **417.3** tons/year
5. Method of Compliance: **CEMS – 4-hour Block Average**	
6. Allowable Emissions Comment (Description of Operating Method): **40 CFR 60.34b(a) and PSD-FL-112(B). Emissions represent total for the three combustor units.**	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **DIOX**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **2.46×10^{-5}** lb/hour **1.08×10^{-4}** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **30 ng/dscm @ 7-percent O_2 (per MSW combustor unit)** Reference: **Permit No. 0112120-014-AV**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Equivalent emissions rates are 2.7×10^{-8} lb/MMBtu/unit, 8.2×10^{-6} lb/hr/unit or 3.6×10^{-5} tons/yr/unit (Permitting Note to Emissions Limitations and Standards, Permit No. 0112120-014-AV).

Potential Emissions for 3 units
Hourly = 8.2×10^{-6} lb/hr x 3 = 2.46×10^{-5} lb/hr
Annual = 3.6×10^{-5} TPY x 3 = 1.08×10^{-4} TPY

See Part II

11. Potential, Fugitive, and Actual Emissions Comment:
Emissions represent total for the three combustor units. See Part II

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **30 ng/dscm @ 7-percent O_2**	4. Equivalent Allowable Emissions: **$2.46x10^{-5}$** lb/hour **$1.08x10^{-4}$**tons/yea
5. Method of Compliance: **EPA Method 23. Annual testing of each unit once every 3 years if test results ≤ 15 ng/dscm for all units over 2-year period.**	
6. Allowable Emissions Comment (Description of Operating Method): **40 CFR 60.33b(c)(1)(ii) and PSD-FL-112(B). Emissions represent total for the three combustor units.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **FL**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **3.63** lb/hour **15.87** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.0040 lb/MMBtu (per MSW combustor unit)** Reference: **Permit No. 0112120-014-AV**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Equivalent emissions rates are 0.0040 lb/MMBtu/unit, 1.21 lb/hr/unit or 5.29 tons/yr/unit (Permitting Note to Emissions Limitations and Standards, Permit No. 0112120-014-AV).

Potential Emissions for 3 units
Hourly = 1.21 lb/hr x 3 = 3.63 lb/hr
Annual = 5.29 TPY x 3 = 15.87 TPY

See Part II

11. Potential, Fugitive, and Actual Emissions Comment:
Emissions represent total for the three combustor units. See Part II

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.0040 lb/MMBtu**	4. Equivalent Allowable Emissions: **3.63** lb/hour **15.87** tons/year
5. Method of Compliance: **EPA Method 13A, 13B, or modified Method 5 for fluorides. Every 5 years.**	
6. Allowable Emissions Comment (Description of Operating Method): **PSD-FL-112(B).** **Emissions represent total for the three combustor units.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **Cadmium – H027**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.029** lb/hour **0.126** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.035 mg/dscm @ 7-percent O_2 (per MSW combustor unit)** Reference: **40 CFR 60 Subpart Cb**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Equivalent emissions rates are 3.15 x 10^{-5} lb/MMBtu/unit, 9.6 x 10^{-3} lb/hr/unit or 0.042 tons/yr/unit.

Potential Emissions for 3 units
Hourly = 0.011 x (0.035/0.040) lb/hr x 3 = 0.029 lb/hr
Annual = 0.048 x (0.035/0.040) TPY x 3 = 0.126 TPY

Potential emissions calculated based on Permitting Note to Emissions Limitations and Standards, Permit No. 0112120-014-AV and prorating using the Subpart Cb limits before and after April 28, 2009.

See Part II

11. Potential, Fugitive, and Actual Emissions Comment:
Emissions represent total for the three combustor units. See Pat II
Emission factor reflects 40 CFR 60 Subpart Cb limit effective after April 28, 2009.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.035 mg/dscm @ 7-percent O_2**	4. Equivalent Allowable Emissions: **0.029** lb/hour **0.126** tons/year
5. Method of Compliance: **EPA Method 29, annually**	
6. Allowable Emissions Comment (Description of Operating Method): **40 CFR 60.33b(a)(2)(i).** **Emissions represent total for the three combustor units.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **Hydrogen Chloride – H106**	2. Total Percent Efficiency of Control: **95**
3. Potential Emissions: **35.1** lb/hour **153.9** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **29 ppmvd @ 7-percent O_2 (per MSW combustor unit)** Reference: **Permit No. 0112120-014-AV**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Equivalent emissions rates are 0.04 lb/MMBtu/unit, 11.7 lb/hr/unit or 51.3 tons/yr/unit (Permitting Note to Emissions Limitations and Standards, Permit No. 0112120-014-AV).

Potential Emissions for 3 units
Hourly = 11.7 lb/hr x 3 = 35.1 lb/hr
Annual = 51.3 TPY x 3 = 153.9 TPY

Part II

11. Potential, Fugitive, and Actual Emissions Comment:
Emissions represent total for the three combustor units. See Part II

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **29 ppmvd @ 7-percent O_2**	4. Equivalent Allowable Emissions: **35.1** lb/hour **153.9** tons/year
5. Method of Compliance: **EPA Method 26, 26A; annually**	
6. Allowable Emissions Comment (Description of Operating Method): **29 ppmvd @ 7-percent O_2 or 95-percent reduction by weight or volume, whichever is less stringent. 40 CFR 60.33b(3)(ii) and PSD-FL-112(B). Emissions represent total for the three combustor units.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **Mercury – H114**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.041** lb/hour **0.17** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.050 mg/dscm @ 7-percent O_2 (per MSW combustor unit)** Reference: **40 CFR 60 Subpart Cb**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Equivalent emissions rates are 4.5 x 10^{-5} lb/MMBtu/unit, 0.014 lb/hr/unit or 0.057 tons/yr/unit.

Potential Emissions for 3 units
Hourly = 0.019 x (0.050/0.070) lb/hr x 3 = 0.041 lb/hr
Annual = 0.08 x (0.050/0.070) TPY x 3 = 0.17 TPY

Potential emissions calculated based on Permitting Note to Emissions Limitations and Standards, Permit No. 0112120-014-AV and prorating using the Subpart Cb limits before and after April 28, 2009.

See Part II

11. Potential, Fugitive, and Actual Emissions Comment:
Emissions represent total for the three combustor units. See Part II
Emission factor reflects 40 CFR 60 Subpart Cb limit effective after April 28, 2009.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.050 mg/dscm @ 7-percent O_2**	4. Equivalent Allowable Emissions: **0.041** lb/hour **0.17** tons/year
5. Method of Compliance: **EPA Method 29, annually**	
6. Allowable Emissions Comment (Description of Operating Method): **0.050 mg/dscm @ 7-percent O_2 or 85-percent reduction by weight, whichever is less stringent. 40 CFR 60.33b(a)(3) and PSD-FL-112(B). Emissions represent total for the three combustor units.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **NOx**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **319.5** lb/hour **1,399** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **205 ppmvd @ 7-percent O_2 (per MSW combustor unit)** Reference: **Permit No. 0112120-014-AV**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Equivalent emissions rates are 0.35 lb/MMBtu/unit, 106.5 lb/hr/unit or 466.4 tons/yr/unit (Permitting Note to Emissions Limitations and Standards, Permit No. 0112120-014-AV).

Potential Emissions for 3 units
Hourly = 106.5 lb/hr x 3 = 319.5 lb/hr
Annual = 466.4 TPY x 3 = 1,399 TPY

See Part II

11. Potential, Fugitive, and Actual Emissions Comment:
Emissions represent total for the three combustor units. See Part II

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **205 ppmvd @ 7-percent O_2**	4. Equivalent Allowable Emissions: **319.5** lb/hour **1,399** tons/year
5. Method of Compliance: **CEMS 24-hour daily arithmetic average.**	
6. Allowable Emissions Comment (Description of Operating Method): **40 CFR 60.33b(d) and PSD-FL-112(B).** **Emissions represent total for the three combustor units.**	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **Pb**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.36** lb/hour **1.58** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.40 mg/dscm @ 7-percent O_2 (per MSW combustor unit)** Reference: **40 CFR 60 Subpart Cb**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Equivalent emissions rates are 4.0 x 10^{-4} lb/MMBtu/unit, 0.12 lb/hr/unit or 0.53 tons/yr/unit.

Potential Emissions for 3 units
Hourly = 0.133 x (0.40/0.44) lb/hr x 3 = 0.36 lb/hr
Annual = 0.58 x (0.40/0.44) TPY x 3 = 1.58 TPY

Potential emissions calculated based on Permitting Note to Emissions Limitations and Standards, Permit No. 0112120-014-AV and prorating using the Subpart Cb limits before and after April 28, 2009.

See Part II

11. Potential, Fugitive, and Actual Emissions Comment:
Emissions represent total for the three combustor units. See Part II
Emission factor reflects 40 CFR 60 Subpart Cb limit effective after April 28, 2009.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.40 mg/dscm @ 7-percent O_2**	4. Equivalent Allowable Emissions: **0.36** lb/hour **1.58** tons/year
5. Method of Compliance: **EPA Method 29, annually**	
6. Allowable Emissions Comment (Description of Operating Method): **40 CFR 60.33b(a)(4).** **Emissions represent total for the three combustor units.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **99+**
3. Potential Emissions: **20.42** lb/hour **89.55** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **25 mg/dscm @ 7-percent O_2 (per MSW combustor unit)** Reference: **40 CFR 60 Subpart Cb**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Equivalent emissions rates are 0.022 lb/MMBtu/unit, 6.81 lb/hr/unit or 29.85 tons/yr/unit.

Potential Emissions for 3 units
Hourly = 7.35 x (0.25/0.27) lb/hr x 3 = 20.42 lb/hr
Annual = 32.24 x (0.25/0.27) TPY x 3 = 89.55 TPY

Potential emissions calculated based on Permitting Note to Emissions Limitations and Standards, Permit No. 0112120-014-AV and prorating using the Subpart Cb limits before and after April 28, 2009.

See Part II

11. Potential, Fugitive, and Actual Emissions Comment:
Emissions represent total for the three combustor units. See Part II
Emission factor reflects 40 CFR 60 Subpart Cb limit effective after April 28, 2009.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **25 mg/dscm @ 7-percent O_2 for PM**	4. Equivalent Allowable Emissions: **20.42** lb/hour **89.55** tons/year
5. Method of Compliance: **EPA Method 5; annually**	
6. Allowable Emissions Comment (Description of Operating Method): **40 CFR 60.33b(a)(1)(i).** **Emissions represent total for the three combustor units.**	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **SO2**	2. Total Percent Efficiency of Control: **75**
3. Potential Emissions: **98.4** lb/hour **430.5** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **29 ppmvd @ 7-percent O_2 (per MSW combustor unit)** Reference: **Permit No. 0112120-014-AV**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Equivalent emissions rates are 0.11 lb/MMBtu/unit, 32.8 lb/hr/unit or 143.5 tons/yr/unit (Permitting Note to Emissions Limitations and Standards, Permit No. 0112120-014-AV).

Potential Emissions for 3 units
Hourly = 32.8 lb/hr x 3 = 98.4 lb/hr
Annual = 143.5 TPY x 3 = 430.5 TPY

See Part II

11. Potential, Fugitive, and Actual Emissions Comment:
Emissions represent total for the three combustor units. See Part II
Sulfur content of the fuel limited to 0.3% by weight (not federally enforceable).

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **29 ppmvd @ 7-percent O_2**	4. Equivalent Allowable Emissions: **98.4** lb/hour **430.5** tons/year
5. Method of Compliance: **CEMS 24-hour block daily geometric mean.**	
6. Allowable Emissions Comment (Description of Operating Method): **29 ppmvd @ 7-percent O_2 or 75-percent reduction by weight or volume, whichever is less stringent. [40 CFR 60.33b (b)(3)(i) and PSD-FL-112(B)] Emissions represent total for the three combustor units.**	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is *or would be* subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE10**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: *Normal Conditions:* **10 %** Exceptional Conditions: **100 %** Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Method 9, annually**	
5. Visible Emissions Comment: **6-minute average; 40 CFR 60.33b (a)(1)(iii) and PSD-FL-112(B)** **Exceptional Conditions: Periods of startup, shutdown, and malfunction. Duration of startup or shutdown periods are limited to 3 hours per occurrence, except as provided in 40 CFR 60.33b(a)(1)(iii).**	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 7

1. Parameter Code: **O2 – Oxygen**	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: **SICK MAIHAK** Model Number: **MCS-100E**	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Used with SO_2, NO_x, and CO monitors.**	

Continuous Monitoring System: Continuous Monitor 2 of 7

1. Parameter Code: **EM – Emission**	2. Pollutant(s): **SO2**
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: **SICK MAIHAK** Model Number: **MCS-100E**	Serial Number: **280, 281, and 271**
5. Installation Date: **02/01/2001**	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Used with SO_2, NO_x, and CO monitors** **Boiler No. 1 - Serial Number: 280** **Boiler No. 2 - Serial Number: 281** **Boiler No. 3 - Serial Number: 271**	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor **3** of **7**

1. Parameter Code: **EM – Emission**	2. Pollutant(s): **NOx**
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: **SICK MAIHAK** Model Number: **MCS-100E**	Serial Number: **280, 281, and 271**
5. Installation Date: **02/01/2001**	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Boiler No. 1 - Serial Number: 280** **Boiler No. 2 - Serial Number: 281** **Boiler No. 3 - Serial Number: 271**	

Continuous Monitoring System: Continuous Monitor **4** of **7**

1. Parameter Code: **EM – Emission**	2. Pollutant(s): **CO**
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: **SICK MAIHAK** Model Number: **MCS-100E**	Serial Number: **280, 281, and 271**
5. Installation Date: **02/01/2001**	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Boiler No. 1 - Serial Number: 280** **Boiler No. 2 - Serial Number: 281** **Boiler No. 3 - Serial Number: 271**	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor **5** of **7**

1. Parameter Code: **VE – Visible Emissions (opacity)**	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: **LAND INSTRUMENTAL INC.** Model Number: **4500 MKII**	Serial Number: **See Comment**
5. Installation Date: **07/21/2003**	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **MSW Combustor Unit 1 – Serial Number 0295820** **MSW Combustor Unit 2 – Serial Number 0295848** **MSW Combustor Unit 3 – Serial Number 0295828**	

Continuous Monitoring System: Continuous Monitor **6** of **7**

1. Parameter Code: **TEMP**	2. Pollutant(s):
3. CMS Requirement:	☒ Rule ☐ Other
4. Monitor Information... Manufacturer: **See Comment** Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **40 CFR 60, Subpart Cb, Monitor manufacturer and model number may vary for maintenance purposes.**	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor 7 of 7

1. Parameter Code: **FLOW – Steam Flow**	2. Pollutant(s):
3. CMS Requirement:	☒ Rule ☐ Other
4. Monitor Information... Manufacturer: **See Comment** Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **40 CFR 60, Subpart Cb; Monitor manufacturer and model number may vary for maintenance purposes.**	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date **6/29/10**

2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date **6/29/10**

3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date **6/29/10**

4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable (construction application)

5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable

6. Compliance Demonstration Reports/Records:
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☒ Not Applicable
   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute:
   ☒ Attached, Document ID: **Part II** ☐ Not Applicable

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)): ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: ☐ Attached, Document ID: _____
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☒ Not Applicable
3. *Alternative Methods of Operation:* ☐ Attached, Document ID: _____ ☒ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements Comment

PART II

PART II

Application for Minor Source Air Construction Permit for Authorization to Combust Biosolids in Municipal Waste Combustor (MWC) Units 1, 2, and 3 (EU IDs 001, 002, and 003)

Introduction

Wheelabrator North Broward, Inc. (Wheelabrator) is seeking authorization from the Florida Department of Environmental Protection (FDEP) for combusting biosolids and landfill gas (LFG) at the North Broward Waste-to-Energy facility. The biosolids would be from existing waste water treatment plants, which are currently disposed of in landfills. The biosolids are non-hazardous solid or liquid waste and the request is consistent with Section 403.707(1) Florida Statutes (F.S.) that allows the Department to allow waste-to-energy facilities to maximize acceptance and processing of non-hazardous solid and liquid wastes. The LFG will be received from Waste Management's Monarch Hill Landfill, adjacent to the North Broward facility. The facility is located at 2600 NW 48th Street, Pompano Beach, Broward County, Florida and currently operating under Title V Permit No. 0112120-014-AV. Biosolids or LFG are currently not authorized as fuels in the Title V permit (Condition A.4)

The North Broward facility operates three municipal waste combustor (MWC) units (Unit Nos. 1, 2, and 3). MWC Unit Nos. 1, 2, and 3 each have a nominal design capacity of 750 tons per day (TPD) of MSW, and 281 million British thermal units per hour (MMBtu/hr) heat input, where the MSW has a heating value of 4,500 British thermal units per pound (Btu/lb). The combustors have a maximum short-term permitted capacity of 807 TPD of MSW, and 302.5 MMBtu/hr heat input. The maximum permitted steam production rate for each combustor is 186,000 pounds per hour (lb/hr) when firing MSW (see Permit No. 0112120-014-AV).

Particulate matter (PM), sulfur dioxide (SO_2), MWC metals and MWC acid gas emissions from the three MSW combustors are controlled by separate fabric filter baghouses and lime spray dryer absorbers. Mercury (Hg) emissions are reduced by pre-combustion separation and an activated carbon system. Carbon monoxide (CO) and nitrogen oxides (NO_x) emissions are controlled by good combustion controls. The three MSW combustors have been retrofitted with Selective Non-Catalytic Reduction (SNCR) NO_x controls in order to comply with the requirements in Title 40, Part 60 of the Code of Federal Regulations (40 CFR 60), Subpart Cb, *Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors that are Constructed on or Before September 20, 1994.*

Golder Associates Inc. (Golder) was contracted to prepare the necessary air permit application seeking authorization to combust biosolids and LFG. The air permit application consists of the appropriate applications form [Part I; DEP Form 62-210.900(1)], a technical description of the project, and rule applicability for the project.

Proposed Project

Combustion of Biosolids

The current Title V Permit for the Wheelabrator North Broward Waste-to-Energy facility currently lists sewage sludge as an unauthorized fuel (Condition A4.b.(1)(h) of Final Permit 0112120-014-AV). In 2012, the Florida Legislature provided additional direction to the Department to allow waste-to-energy facilities to maximize acceptance and processing of non-hazardous solid and liquid waste. The specific provisions are contained in Section 403.707(1) Florida Statutes (F.S.) that is presented below:

> **Resource Recovery and Management 403.707 Permits.**
>
> (1) A solid waste management facility may not be operated, maintained, constructed, expanded, modified, or closed without an appropriate and currently valid permit issued by the department. The department may by rule exempt specified types of facilities from the requirement for a permit under this part if it determines that construction or operation of the facility is not expected to create any significant threat to the environment or public health. For purposes of this part, and only when specified by department rule, a permit may include registrations as well as other forms of licenses as defined in s. 120.52. Solid waste construction permits issued under this section may include any permit conditions necessary to achieve compliance with the recycling requirements of this act. The department shall pursue reasonable timeframes for closure and construction requirements, considering pending federal requirements and implementation costs to the permittee. The department shall adopt a rule establishing performance standards for construction and closure of solid waste management facilities. The standards shall allow flexibility in design and consideration for site-specific characteristics. For the purpose of permitting under this chapter, the department shall allow waste-to-energy facilities to maximize acceptance and processing of nonhazardous solid and liquid waste.

Wheelabrator is seeking authorization to combust biosolids based on following reasons. First, the combustion of biosolids is consistent with the Florida Legislature's direction to maximize the use of non-hazardous solid and liquid wastes in a waste-to-energy facility. Second, combustion of biosolids would not change any performance or emission limiting standards and no significant increase in emissions of regulated pollutants are expected. Third, the project would demonstrate that no significant emission increase will occur by using the *Baseline Actual-to-Projected Actual Test for Modification at Existing Emission Units* in FDEP Rule 62-212.400(2)(a)1 F.A.C. Finally, the Department has issued authorizations to Lee County Resource Recovery Facility, Hillsborough County Resource Recovery Facility and Pinellas County Resource Recovery Facility to combust 5 percent by weight of biosolids with MSW based on a detailed review of applicable requirements and emission information for a waste-to-energy facility [Final Permits Nos. 0710119-009-AC/PSD-FL-151F (Lee County), 0570261-016-AC (Hillsborough)].

For the North Broward Resource Recovery Facility, Wheelabrator requests a phased air construction permit to allow combustion of increasing amounts of biosolids from 7.5 percent to 15 percent by weight. In the first phase, 7.5 percent by weight of biosolids with MSW would be combusted in the MWCs. After demonstration of compliance at 7.5 percent by weight biosolids with MSW the facility, the second phase would authorize the combustion of up to 15 percent biosolids by weight with MSW.

This request is based on the approvals of three facilities in Florida as well as biosolids combustion test performed in 2012 at Wheelabrator's Westchester Resource recovery facility located in Peekskill, New York. In this combustion test on a MWC unit similar to the units at the North Broward facility, biosolids was combusted with MSW at 5, 10 and 15 percent by weight of the total fuel input. The results of these combustion tests found that biosolids up to 15 percent by weight of total fuel input could be combusted with MSW with emission within the compliance limits. Appendix A contains a copy of the test report.

The biosolids that would be obtained are Class B, A and AA non-liquid biosolids as defined in Rule 62-640.200, F.A.C. with a minimum solids content of 12 percent. The biosolids would be obtained from various wastewater treatment facilities located in South Florida. Appendix B presents analyses from various South Florida treatment facilities. The analyses include concentrations for various metals including Hg, cadmium (Cd) and lead (Pb) for which emission limits have been established by the Department.

The following table presents a comparison of the MSW and maximum concentration in biosolids for arsenic (As), Cd, chromium (Cr), Hg, nickel (Ni) and Pb. The comparisons shows the EPA uncontrolled emissions factors for mass-burn MSW and calculating the maximum emissions using the biosolids data presented in Appendix B assuming all metals in the biosolids are volatilized during the combustion process. The maximum metal concentrations in Appendix B were adjusted based on the percent moisture since the metal analyses are provided on a dry basis. As shown in the table, the uncontrolled emissions in biosolids are lower than those in MSW.

	Uncontrolled MSW EF[a]	Maximum Biosolids Concentration[b] (wet)	
Metal	(lb/ton)	(mg/kg)	(lb/ton)
As	4.73E-03	0.74	1.49E-03
Cd	1.09E-02	0.18	3.60E-04
Cr	8.97E-03	2.55	5.10E-03
Hg	5.60E-03	0.09	1.83E-04
Ni	7.85E-03	1.65	3.30E-03
Pb	2.13E-01	3.42	6.84E-03

[a] EF = EPA AP-42 Emission Factors from Section 2.1 Refuse Combustion, Table 2.1-2.
[b] Maximum concentration from Appendix B adjusted for moisture content.

The MWC units are currently subject to exhaust emission concentration limits for Cd, Hg, and Pb. Exhaust concentrations for these pollutants from the combustion of biosolids were calculated based on the maximum concentrations (Appendix B) and assuming a conservative control level of 85 percent. The following table compares the calculated exhaust gas concentration of Cd, Hg and Pb for biosolids combustion with the current emission limits for these pollutants. As shown in the table, the metal

concentrations in exhaust air for biosolids combustion, assuming a conservative control level of 85 percent, are less than the currently permitted emission limits.

Metal	Exhaust Air Concentration (mg/dscm @ 7 percent O_2)	
	Permit Emission Limit	from Biosolids Combustion
Cd	0.035	0.00612
Hg	0.05	0.00311
Pb	0.4	0.11638

Biosolids combustion will not require any physical or operational changes to the MWC units. The biosolids will be delivered by trucks and will be fed directly into the pit from the trucks. Biosolids will be mixed with MSW in the pit utilizing an orange-peel refuse crane grapple and then fed into boiler feed hoppers utilizing the same crane grapple. No odor is expected to be generated from the process. The digested sludge does not generate an odor when unloaded on the tipping floor, mainly due to the nature of the material and the tipping floor remains under a negative pressure to prevent odor outside the facility tipping floor building.

Combustion of LFG

LFG is currently not burned in the North Broward MWC units. Wheelabrator proposes to use LFG from the adjacent Monarch Hill Landfill, where the LFG is currently flared off. Depending on the availability of LFG, Wheelabrator is proposing a maximum of 8,100 standard cubic feet per minute (scfm) of LFG gas usage on a short-term basis and 6,000 scfm of LFG on an annual average basis. Based on the an engineering study conducted by Wheelabrator, the Monarch Hill LFG contains 48 percent methane (CH_4), which suggests a fuel high heating value of 480 British thermal units per standard cubic feet (Btu/scf) [1,000 Btu/scf high heating value (HHV) x 0.48)]. Using a LFG flow of 8,100 scfm gas flow, a total of 233.3 million British thermal units per hour (MMBtu/hr) of maximum heat input can be obtained from LFG, which is approximately 25.7 percent of the maximum short term heat input capacity of the three MWC units (302.5 MMBtu/hr x 3).

The MWC units at the North Broward facility currently use natural gas as a start-up fuel. The project will include replacing the natural gas burners with dual fuel burners to accommodate the LFG fuel. The LFG-firing project will include the following:

- Replacing natural gas burners with dual fuel burners
- Upgrading existing burner management system
- Adding new block and bleed valves for LFG
- LFG moisture treatment and conditioning system including moisture knock-out vessel, gas compressor and blowers, air-to-gas coolers, and filters to remove particulate matter larger than 10 microns from the gas stream

- Pipeline to supply LFG from the adjacent Monarch Hill Landfill

The project will cost approximately $6 million, which includes engineering, equipment procurement, installation, commissioning, and construction management.

Combustion of LFG would not change any performance or emission limiting standards and no significant increase in emissions of regulated pollutants are expected. LFG combustion will not increase the current heat input limit of the MWC units. A fraction of heat input currently obtained from MSW and segregated load combustion will be replaced by LFG combustion and as demonstrated by the *Baseline Actual-to-Projected Actual Test*, emissions of certain pollutants such as NO_X will actually decrease as a result of LFG combustion.

The most recent LFG sampling data from the Monarch Hill Landfill shows a Total Reduced Sulfur content of 690 parts per million by volume (ppmv) in the LFG. This test data is shown in Appendix C. However, the maximum design Total Reduced Sulfur concentration for the project is 2,800 ppmv. The *Baseline Actual-to-Projected Actual Test* conservatively assumed a hydrogen sulfide (H_2S) content of 2,800 ppmv and demonstrated that the increase in the sulfur dioxide (SO_2) emissions will be less than 40 tons per year (TPY) using the existing control equipment (dry scrubber-fabric filter).

RULE APPLICABILITY

New Source Performance Standards (NSPS) / National Emission Standards for Hazardous Air Pollutants (NESHAPS)

NSPS

The emissions from the MWC units are currently regulated under 40 CFR Part 60 Subpart Cb and Eb. This applicability will not change with the combustion of biosolids. Subpart LLLL and MMMM regulate emissions from new and existing sewage sludge incinerators. Subpart LLLL only applies to sewage sludge incineration units for which construction commenced after October 14, 2010 or for which modification commenced after September 21, 2011 [§60.4770(a)] and both NSPS exempt units that are not located at a wastewater treatment facility designed to treat domestic sewage sludge (§60.4780 and §60.5065 for Subparts LLLL and MMMM, respectively). For the exemption to be applicable, the owner or operator of such a combustion unit must notify the Administrator of an exemption claim under this section. The North Broward Resource Recovery facility was constructed prior to October 14, 2010 and no modification is required to combust biosolids. Therefore Subpart LLLL is not applicable. The facility is also not located at a wastewater treatment facility. Wheelabrator, through this application, provides notice that the exemption under Subpart MMMM is applicable. Therefore, Subpart MMMM is not applicable. While the exemption in Subpart MMMM states that "These units may be subject to another subpart of this part (*e.g.*, subpart CCCC of this part)", the MWC units are already subject to Subparts Cb and Eb that

were promulgated under the same regulatory framework as Subpart CCCC (i.e., Clean Air Act Section 129).

NESHAPS

The NESHAPS in 40 CFR Part 61 Subpart E National Emissions Standards for Mercury are applicable to the combustion of the biosolids (sewage sludge). These NESHAPS would be applicable to the project and require that mercury emissions do not exceed 3.2 kilograms (kg) (7.1 lb) of mercury per 24-hour period [§61.52(b)]. The estimated maximum mercury emissions from combusting 15 percent biosolids based on the analyses in Appendix B and assuming a conservative 85 percent control is 0.011 lb per 24-hour. Subpart E, Section 61.53 (d) does require stack testing to demonstrate compliance unless a waiver is obtained under Section 61.13 [§61.53(1)]. Pursuant to Section 61.13(h)(1)(iii) a waiver can be granted if the owner demonstrates that compliance can be demonstrated by other means. Wheelabrator, through this application, requests a waiver of the stack-testing requirements. The facility is already required to conduct annual testing for Hg and incorporates Hg removal as one of the control techniques. The emissions over many years have demonstrated compliance with the Subpart Cb/Eb Hg emission limits. At the Hg emission limit of 50 micrograms (µg) per dry standard cubic meter corrected to 7 percent oxygen, the maximum facility emissions are estimated be 1.6 pounds Hg per 24-hour period, which is well less than the Subpart E standard of 7.1 lb Hg per 24-hour period. Moreover, the actual emission rates during annual testing have been many times lower than the Hg emission limits. Therefore, a waiver is appropriate since demonstration with Subpart E standards can be demonstrated through the existing testing requirements.

PSD/New Source Review (NSR)

Under Federal and State of Florida Prevention of Significant Deterioration (PSD) review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) must be reviewed and a pre-construction permit issued. The U.S. Environmental Protection Agency (EPA) has approved Florida's State Implementation Plan (SIP), which contains PSD regulations. Therefore, PSD approval authority has been granted to FDEP. For projects approved under the Florida Power Plant Siting Act (PPSA), the PSD program is delegated.

A "major facility" is defined as any 1 of 28 named source categories that have the potential to emit 100 TPY or more, or any other stationary facility that has the potential to emit 250 TPY or more of any pollutant regulated under the CAA. "Potential to emit" means the capability, at maximum design capacity, to emit a pollutant after the application of control equipment. Once a new source is determined to be a "major facility" for a particular pollutant, any pollutant emitted in amounts greater than the PSD significant emission rates is subject to PSD review. For an existing source for which a modification is proposed, the modification is subject to PSD review if the net increase in emissions due to the modification is greater than the PSD significant emission rates.

PSD review is used to determine whether significant air quality deterioration will result from the new or modified facility. Federal PSD requirements are contained in 40 CFR 52.21, *Prevention of Significant Deterioration of Air Quality*. The State of Florida has adopted the federal PSD regulations by reference [Rule 62-212.400, Florida Administrative Code (F.A.C.)]. Major facilities and major modifications are required to undergo the following analysis related to PSD for each pollutant emitted in significant amounts:

- Control technology review
- Source impact analysis
- Air quality analysis (monitoring)
- Source information
- Additional impact analyses

The Wheelabrator North Broward Waste-to-Energy facility is a major facility under FDEP rules. For an existing major facility for which a project is proposed, the project is subject to PSD review if the net increase in emissions due to the project is greater than the PSD significant emission rates for any applicable pollutant. A "modification" is defined in FDEP Rule 62-210.200(205), F.A.C., as "any physical change in, change in the method of operation of, or addition to a facility which would result in an increase in the actual emissions of any pollutant subject to regulation under the [Clean Air] Act, including any not previously emitted, from any emission unit or facility." Because there is an operational change and the mass emissions could potentially increase using biosolids, the project is a potential modification as defined in Rules 62-210.200 and 62-212.400 (PSD), F.A.C.

To demonstrate that the proposed project is not a major modification under the Department's PSD rules, an emissions comparison between baseline actual emissions and projected actual emissions was conducted pursuant to FDEP Rule 62-212.400(2)(1), F.A.C., for Wheelabrator North Broward MWC Units 1, 2 and 3. The baseline, or current, actual emissions are the emissions over a consecutive 24-month period within the five years immediately proceeding the date that a complete application is submitted. The use of different consecutive 24-month periods for each pollutant is allowed. Projected actual emissions are the maximum annual rate, in TPY, at which the existing emission unit is projected to emit a PSD pollutant in any of the five years following the date the unit resumes regular operation.

Table 1 presents the actual annual heat inputs from different fuels reported in the Annual Operating Reports (AORs) for the period 2008 through 2012. This table also presents the total actual heat input from all fuels, as well as the actual operating hours for each unit.

Table 2 summarizes the annual emissions reported in the AORs for each calendar year in the period 2008 through 2012. The carbon dioxide (CO_2) emission rates in Table 2 were obtained using the heat input and emission factors from Title 40, Part 98 of the Code of Federal Regulations (40 CFR 98), Table C-1.

In Table 3, the actual emissions are presented as a function of heat input.

Emissions of nitrous oxide (N_2O) and methane (CH_4) were also calculated based on the actual annual heat input and emission factors from 40 CFR 98, Subpart C, Table C-2. These emissions are summarized in Table 4, which also shows the CO_2 equivalent (CO_2e) rates for these pollutants.

Table 5 presents the average emissions for each consecutive two-year period based on the calendar year emissions in Tables 2, 3 and 4. The annual average emissions for each consecutive two-year period are consistent with the definition of baseline actual emissions.

Hourly and annual potential emission rates for combusting LFG are presented in Table 6. Emissions for CO, NO_x, particulate matter (PM, PM_{10} and $PM_{2.5}$), non-methane hydrocarbons (NMHC) and volatile organic compounds (VOC) were estimated using AP-42 emission factors for combustion of LFG in boilers. VOC emissions were estimated based on an assumption that 100 percent of the NMOC emissions are VOCs. SO_2 emissions are related to the total reduced sulfur concentration in the LFG. The design value of 2,800 ppmv was used in the emission calculations. Note that the recent LFG sampling of sulfur content from the JEC landfill shows maximum sulfur content of 690 ppmv but can vary based on waste.

Control efficiency for NO_x was based on SNCR with a removal efficiency of 70-percent. Controlled emissions for SO_2 was based on using dry scrubber-fabric filter at a removal efficiency of 95-percent. NMOC and VOC emissions using 98-percent destruction efficiency, which is consistent with the NSPS Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills requirements.

Minor amount of hydrogen chloride (HCl) and Hg are contained in LFG. Based on AP-42 emission factors from Section 2.4, the uncontrolled emissions of HCl and Hg are 6.2 and 0.00023 TPY, respectively. With the control system installed in the North Broward facility, these emissions are considered negligible.

The baseline actual emissions and project actual emissions are compared in Table 7. The projected actual emissions are calculated based on the annual potential emission rates for combusting LFG and projected actual annual emissions from combusting MSW. The Westchester tests demonstrated that NOX, CO, SO2, and visible (opacity) emissions from combustion of biosolids are expected to be well below the current emissions limits for these pollutants. As a result it is unlikely that combustion of biosolids will increase the emissions from the current levels. The projected actual emissions therefore, did not consider biosolids combustion separately. Although the potential annual emissions from LFG combustion is based on approximately 19-percent of the annual heat input capacity from the three MWC units (6000 scfm of LFG on an annual basis), the future projected actual emissions from MSW combustion is based on 85-percent of the average of the total actual annual heat input from the three MWC units for the period 2008-2012 (see Table 1).

As shown in Table 7, actual annual emissions of NOX, CO, fluorides, and mercury are projected to decrease as a result of the project. Actual emissions of all other pollutants are projected to increase but well below the PSD significant emission rates for each pollutant. As a result, PSD is not applicable for the project.

As provided by Rule 62-212.300(1)(e) F.A.C., Wheelabrator will monitor emissions for a period of five years after increasing the amount of non-MSW as segregated loads, and provide information according to Rule 62-212.300(1)(e)2.a through d within 60 days after the end of each year.

PROPOSED CHANGES TO EXISTING PERMIT CONDITIONS

Wheelabrator offers the following suggested changes and conditions to be included in the air construction permit. The existing conditions provided are those in the current Final Title V Permit 0112119-015-AV. ~~Strikethrough~~ denotes deletion of text and underline denotes additions. (Note: Only those conditions where changes or an addition is needed are shown below.)

Condition A.4 Methods of Operation

(b) Unauthorized Fuels

(1) Shall Not Burn

~~(h) Sewage Sludge~~

New Condition

Authorized Fuels – Dewatered Sewage Sludge (Biosolids): Sewage sludge is not a prohibited fuel or a prohibited solid waste and may be utilized, after dewatering, as biosolids (containing at least 12 percent solids by weight) in MWC Units 1, 2, and 3.

Authorized Fuels – Landfill Gas: Landfill gas may be used as a supplementary fuel for an average annual rate of 6,000 scfm for MWC Units 1, 2, and 3, combined.

Limitation of Biosolids: The owner or operator is authorized to combust up to 7.5 percent by weight (equivalent to 65 wet tons per day per unit, as received at maximum capacity) of biosolids that contain at least 12 percent solids, by weight, in MWC Units 1, 2, and 3 combined. Upon demonstration of compliance with the SO_2, NO_x and CO emissions limits using continuous emissions monitoring (CEMS) for a period not less than 7 days and notification to the Department, the permittee may utilize up to 15 percent biosolids for the purpose obtaining CEMs data over a period of not less than 7 days. Upon demonstration of compliance, the permittee shall apply for a Title V revision that shall authorize the permittee the use of the highest percentage of biosolids as an authorized fuel.

TABLES

Table 1. Wheelabrator North Broward Burners Nos. 1, 2 & 3 Annual Heat Inputs, 2008 - 2012

	Heat Input from Solid Waste (MMBtu/yr)				Heat Input from Natural Gas (MMBtu/yr)				Total Actual Heat Input (MMBtu/yr)				Actual Operating Hours (hr/yr)		
Year	Burner 1	Burner 2	Burner 3	Total	Burner 1	Burner 2	Burner 3	Total	Burner 1	Burner 2	Burner 3	Total	Burner 1	Burner 2	Burner 3
2008	2,463,858	2,456,037	2,509,848	7,429,743	6,483	4,406	6,410	17,299	2,470,341	2,460,443	2,516,258	7,447,042	8,170	8,172	8,258
2009	2,395,143	2,496,933	2,422,818	7,314,894	28,240	10,200	24,148	62,588	2,423,383	2,507,133	2,446,966	7,377,482	8,244	8,333	8,100
2010	2,484,351	2,435,652	2,446,164	7,366,167	8,321	5,679	8,968	22,968	2,492,672	2,441,331	2,455,132	7,389,135	8,358	8,144	8,295
2011	2,453,319	2,456,946	2,479,878	7,390,143	7,746	8,456	8,811	25,014	2,461,065	2,465,402	2,488,689	7,415,157	8,215	8,215	8,277
2012	2,436,516	2,377,980	2,514,240	7,328,736	15,180	5,314	6,943	27,436	2,451,696	2,383,294	2,521,183	7,356,172	8,119	8,130	8,326
											Average	7,396,998			

Individual Fuel Heat Input as a Percent of Total Heat Input

	Heat Input from Solid Waste (MMBtu/yr)				Heat Input from Natural Gas (MMBtu/yr)			
Year	Burner 1	Burner 2	Burner 3	Total	Burner 1	Burner 2	Burner 3	Total
2008	33.1%	33.0%	33.7%	99.8%	0.1%	0.1%	0.1%	0.2%
2009	32.5%	33.8%	32.8%	99.2%	0.4%	0.1%	0.3%	0.8%
2010	33.6%	33.0%	33.1%	99.7%	0.1%	0.1%	0.1%	0.3%
2011	33.1%	33.1%	33.4%	99.7%	0.1%	0.1%	0.1%	0.3%
2012	33.1%	32.3%	34.2%	99.6%	0.2%	0.1%	0.1%	0.4%

Note: All values are based on annual operating reports for the period 2008 - 2012.

Table 2. Wheelabrator North Broward Annual Emissions Reported in 2008-2012 Annual Operating Reports

Year	Pollutant	MWC Unit No. 1 (tons)	MWC Unit No. 2 (tons)	MWC Unit No. 3 (tons)	Total (tons)
2008	NO_x	455.4	453.8	463.9	1,373.2
	CO	20.1	20.0	20.5	60.5
	SO_2	44.5	44.3	45.3	134.2
	VOC	3.9	3.8	3.9	11.7
	PM	2.2	2.1	2.2	6.5
	PM_{10}	2.2	2.1	2.2	6.5
	SAM [a]	0.0	0.0	0.0	0.0
	D/F	6.00E-06	8.00E-06	6.00E-06	1.80E-05
	Hyd. Chloride	21.9	21.8	22.3	66.0
	Fluorides	0.103	0.102	0.105	0.310
	Lead	0.007	0.007	0.007	0.020
	Mercury	0.014	0.014	0.014	0.041
	CO_2	246,515	245,612	251,105	743,231
2009	NO_x	440.6	458.0	445.4	1,344
	CO	23.2	23.4	23.3	70
	SO_2	46.6	48.6	47.1	142
	VOC	3.7	3.8	3.8	11
	PM	1.9	1.9	1.9	6
	PM_{10}	1.9	1.9	1.9	6
	SAM [a]	0.0	0.0	0.0	0
	D/F	4.00E-06	4.00E-06	4.00E-06	1.20E-05
	Hyd. Chloride	20.2	21.1	20.5	61.8
	Fluorides	0.104	0.108	0.105	0.317
	Lead	0.004	0.004	0.004	0.012
	Mercury	0.012	0.012	0.012	0.037
	CO_2	240,921	250,036	243,447	734,404
2010	NO_x	463.9	454.6	456.8	1,375
	CO	32.6	31.9	32.2	97
	SO_2	60.7	59.5	59.8	180
	VOC	3.8	3.7	3.7	11
	PM	2.0	1.9	1.9	6
	PM_{10}	2.0	1.9	1.9	6
	SAM [a]	0.0	0.0	0.0	0
	D/F	4.00E-06	3.00E-06	3.00E-06	1.00E-05
	Hyd. Chloride	24.6	24.1	24.2	72.8
	Fluorides	0.112	0.110	0.110	0.331
	Lead	0.004	0.004	0.036	0.044
	Mercury	0.011	0.011	0.011	0.034
	CO_2	248,669	243,650	244,892	737,211
2011	NO_x	453.2	453.9	458.1	1,365
	CO	29.9	30.0	30.3	90
	SO_2	42.5	42.6	43.0	128
	VOC	3.9	3.9	3.9	12
	PM	1.2	1.2	1.2	4
	PM_{10}	1.2	1.2	1.2	4
	SAM [a]	0.0	0.0	0.0	0
	D/F	2.00E-06	2.00E-06	2.00E-06	6.00E-06
	Hyd. Chloride	26.6	26.6	26.9	80.1
	Fluorides	0.116	0.116	0.117	0.349
	Lead	0.001	0.001	0.001	0.002
	Mercury	0.009	0.009	0.009	0.027
	CO_2	245,536	245,939	248,251	739,726
2012	NO_x	447.6	436.2	461.3	1,345
	CO	22.9	22.0	23.3	68
	SO_2	38.6	37.7	39.8	116
	VOC	3.8	3.6	3.9	11
	PM	1.7	1.7	1.8	5
	PM_{10}	1.7	1.7	1.8	5
	SAM [a]	0.0	0.0	0.0	0
	D/F	1.00E-06	1.00E-06	1.00E-06	3.00E-06
	Hyd. Chloride	23.6	23.0	24.3	70.8
	Fluorides	0.035	0.034	0.036	0.106
	Lead	0.001	0.001	0.001	0.004
	Mercury	0.015	0.014	0.015	0.044
	CO_2	244,291	237,867	251,574	733,733

Source: Annual Operating Report (AOR) for Wheelabrator North Broward, Inc., 2008 - 2012. Note: 2012 AOR Updated 8-29-13.

Table 3. Wheelabrator North Broward Actual Emissions as a Function of Heat Input, 2008 - 2012

BURNER 1

Year	Actual Annual Heat Input (MMBtu/yr) [a]	MWC Unit 1 Actual Emissions (TPY) [b]												Emissions per Unit Heat Input [c] (lb/MMBtu)											
		NO_x	CO	VOC	SO_2	PM	PM_{10}	SAM	D/F	Hyd. Chloride	Fluorides	Lead	Mercury	CO_2	NO_x	CO	VOC	SO_2	PM	PM_{10}	SAM	D/F	Hyd. Chloride	Fluorides	Lead	Mercury	CO_2
2008	2,470,341	455.4	20.1	3.9	44.5	2.2	2.2	6.8	6.00E-06	21.9	0.10	8.57E-03	0.01	246,514.5	0.3687	0.0163	0.0031	0.0360	0.0017	0.0017	0.0055	4.86E-09	0.0177	8.31E-05	5.32E-06	1.10E-05	199.6
2009	2,423,383	440.6	23.2	3.7	46.6	1.9	1.9	7.1	4.00E-06	20.2	0.10	3.87E-03	0.01	240,921.2	0.3636	0.0192	0.0031	0.0384	0.0015	0.0015	0.0059	3.30E-09	0.0167	8.57E-05	3.19E-06	9.89E-06	196.8
2010	2,492,672	463.9	32.6	3.8	60.7	2.0	2.0	9.3	4.00E-06	24.6	0.11	3.73E-03	0.01	248,669.1	0.3722	0.0262	0.0030	0.0487	0.0016	0.0016	0.0075	3.21E-09	0.0197	8.97E-05	2.99E-06	9.08E-06	199.5
2011	2,461,065	453.2	29.9	3.9	42.5	1.2	1.2	6.5	2.00E-06	26.6	0.12	6.83E-04	0.01	245,535.5	0.3683	0.0243	0.0032	0.0346	0.0010	0.0010	0.0053	1.63E-09	0.0216	9.41E-05	5.55E-07	7.31E-06	198.5
2012	2,451,696	447.6	22.9	3.8	38.6	1.7	1.7	5.9	1.00E-06	23.6	0.04	1.22E-03	0.01	244,291.2	0.3651	0.0187	0.0031	0.0315	0.0014	0.0014	0.0048	8.16E-10	0.0192	2.67E-05	9.97E-07	1.20E-05	199.3
														Maximum =	0.3722	0.0262	0.0032	0.0487	0.0017	0.0017	0.0075	4.86E-09	0.0216	9.41E-05	5.32E-06	1.20E-05	199.5793

BURNER 2

Year	Actual Annual Heat Input (MMBtu/yr) [a]	MWC Unit 2 Actual Emissions (TPY) [b]												Emissions per Unit Heat Input [c] (lb/MMBtu)											
		NO_x	CO	VOC	SO_2	PM	PM_{10}	SAM	D/F	Hyd. Chloride	Fluorides	Lead	Mercury	CO_2	NO_x	CO	VOC	SO_2	PM	PM_{10}	SAM	D/F	Hyd. Chloride	Fluorides	Lead	Mercury	CO_2
2008	2,460,443	453.8	20.0	3.8	44.3	2.1	2.1	6.8	6.00E-06	21.8	0.10	6.55E-03	0.01	245,611.8	0.3689	0.0162	0.0031	0.0360	0.0017	0.0017	0.0055	4.88E-09	0.0177	8.32E-05	5.32E-06	1.10E-05	199.6
2009	2,507,133	458.0	23.4	3.8	48.6	1.9	1.9	7.4	4.00E-06	21.1	0.11	4.03E-03	0.01	250,035.8	0.3654	0.0187	0.0031	0.0387	0.0015	0.0015	0.0059	3.19E-09	0.0168	6.63E-05	3.21E-06	9.96E-06	199.5
2010	2,441,331	454.6	31.9	3.7	59.5	1.9	1.9	9.1	3.00E-06	24.1	0.11	3.65E-03	0.01	243,649.8	0.3724	0.0261	0.0030	0.0488	0.0016	0.0016	0.0075	2.46E-09	0.0197	8.98E-05	2.98E-06	9.09E-06	199.6
2011	2,465,402	453.9	30.0	3.9	42.6	1.2	1.2	6.5	2.00E-06	26.6	0.12	6.84E-04	0.01	245,939.3	0.3682	0.0243	0.0032	0.0345	0.0010	0.0010	0.0053	1.62E-09	0.0216	9.41E-05	5.55E-07	7.31E-06	199.5
2012	2,363,294	436.2	22.0	3.6	37.7	1.7	1.7	5.8	1.00E-06	23.0	0.03	1.19E-03	0.01	237,867.1	0.3660	0.0185	0.0031	0.0316	0.0014	0.0014	0.0048	8.39E-10	0.0193	2.86E-05	9.99E-07	1.21E-05	199.6
														Maximum =	0.3724	0.0261	0.0032	0.0488	0.0017	0.0017	0.0075	4.88E-09	0.0216	9.41E-05	5.32E-06	1.21E-05	199.6

BURNER 3

Year	Actual Annual Heat Input (MMBtu/yr) [a]	MWC Unit 3 Actual Emissions (TPY) [b]												Emissions per Unit Heat Input [c] (lb/MMBtu)											
		NO_x	CO	VOC	SO_2	PM	PM_{10}	SAM	D/F	Hyd. Chloride	Fluorides	Lead	Mercury	CO_2	NO_x	CO	VOC	SO_2	PM	PM_{10}	SAM	D/F	Hyd. Chloride	Fluorides	Lead	Mercury	CO_2
2008	2,516,256	463.9	20.5	3.9	45.3	2.2	2.2	6.9	6.00E-06	22.3	0.10	6.70E-03	0.01	251,104.6	0.3687	0.0163	0.0031	0.0360	0.0017	0.0017	0.0055	4.77E-09	0.0177	8.31E-05	5.32E-06	1.10E-05	199.6
2009	2,446,966	445.4	23.3	3.8	47.1	1.9	1.9	7.2	4.00E-06	20.5	0.10	3.91E-03	0.01	243,446.8	0.3640	0.0191	0.0031	0.0385	0.0015	0.0015	0.0059	3.27E-09	0.0167	8.58E-05	3.19E-06	9.90E-06	199.0
2010	2,455,132	456.8	32.2	3.7	59.8	1.9	1.9	9.2	3.00E-06	24.2	0.11	3.63E-03	0.01	244,692.1	0.3721	0.0262	0.0030	0.0487	0.0016	0.0016	0.0075	2.44E-09	0.0197	8.97E-05	2.96E-05	9.08E-06	199.5
2011	2,488,689	458.1	30.3	3.9	43.0	1.2	1.2	6.6	2.00E-06	26.9	0.12	6.91E-04	0.01	248,250.9	0.3682	0.0243	0.0032	0.0345	0.0010	0.0010	0.0053	1.61E-09	0.0216	9.41E-05	5.55E-07	7.31E-06	199.5
2012	2,521,183	461.3	23.3	3.9	39.6	1.8	1.8	6.1	1.00E-06	24.3	0.04	1.26E-03	0.02	251,574.5	0.3659	0.0185	0.0031	0.0316	0.0014	0.0014	0.0048	7.93E-10	0.0193	2.88E-05	9.98E-07	1.21E-05	199.6
														Maximum =	0.3721	0.0262	0.0032	0.0487	0.0017	0.0017	0.0075	4.77E-09	0.0216	9.41E-05	2.96E-05	1.21E-05	199.6

BURNERS 1, 2 & 3

Year	Actual Annual Heat Input (MMBtu/yr) [a]	MWC Units 1,2 & 3 Total Actual Emissions (TPY) [b]												Emissions per Unit Heat Input [c] (lb/MMBtu)											
		NO_x	CO	VOC	SO_2	PM	PM_{10}	SAM	D/F	Hyd. Chloride	Fluorides	Lead	Mercury	CO_2	NO_x	CO	VOC	SO_2	PM	PM_{10}	SAM	D/F	Hyd. Chloride	Fluorides	Lead	Mercury	CO_2
2008	7,447,042	1,373.2	60.5	11.7	134.2	6.5	6.5	20.5	1.80E-05	66.0	0.31	1.98E-02	0.04	743,231.0	0.3688	0.0163	0.0031	0.0360	0.0017	0.0017	0.0055	4.83E-09	0.0177	8.31E-05	5.32E-06	1.10E-05	199.6
2009	7,377,482	1,344.0	70.0	11.3	142.3	5.6	5.6	21.6	1.20E-05	61.8	0.32	1.18E-02	0.04	734,403.9	0.3644	0.0190	0.0031	0.0386	0.0015	0.0015	0.0059	3.25E-09	0.0167	8.59E-05	3.20E-06	9.92E-06	199.1
2010	7,389,135	1,375.3	96.7	11.2	180.1	5.8	5.8	27.6	1.00E-05	72.8	0.33	4.37E-02	0.03	737,211.0	0.3723	0.0262	0.0030	0.0467	0.0016	0.0016	0.0075	2.71E-09	0.0197	6.97E-05	1.18E-05	9.08E-06	199.5
2011	7,415,157	1,365.2	90.1	11.8	128.1	3.5	3.5	19.6	6.00E-06	80.1	0.35	2.06E-03	0.03	739,725.8	0.3682	0.0243	0.0032	0.0346	0.0010	0.0010	0.0053	1.62E-09	0.0216	9.41E-05	5.55E-07	7.31E-06	199.5
2012	7,356,172	1,345.0	68.3	11.3	116.0	5.2	5.2	17.8	3.00E-06	70.8	0.11	3.67E-03	0.04	733,732.8	0.3657	0.0186	0.0031	0.0316	0.0014	0.0014	0.0048	8.16E-10	0.0193	2.88E-05	9.98E-07	1.21E-05	199.5
														Maximum =	0.3723	0.0262	0.0032	0.0487	0.0017	0.0017	0.0075	4.83E-09	0.0216	9.41E-05	1.18E-05	1.21E-05	199.6

[a] Based on AOR data; see Table 1.

[b] Based on AOR data; see Table 2.

[c] Total actual emissions divided by total heat input.

Table 4. Wheelabrator North Broward Estimated Actual Annual Emissions of N_2O and CH_4 for the Period 2008 - 2012
Burners Nos. 1, 2 & 3

Unit	Actual Annual Heat Input [a] (MMBtu/yr)	N_2O Emissions			CO_2e [c]	CH_4 Emissions			CO_2e [c]
		Emission Factor [b] (lb/MMBtu)	Annual Emissions (lb/yr)	Annual Emissions (TPY)	Rate (TPY)	Emission Factor [b] (lb/MMBtu)	Annual Emissions (lb/yr)	Annual Emissions (TPY)	Rate (TPY)
Solid Waste									
2008	7,429,743	3.53E-03	26,200.2	13.1	4,061.0	2.4E-02	180,126.7	90.1	1,891.3
2009	7,314,894	3.53E-03	25,795.2	12.9	3,998.3	2.4E-02	177,342.3	88.7	1,862.1
2010	7,366,167	3.53E-03	25,976.1	13.0	4,026.3	2.4E-02	178,585.4	89.3	1,875.1
2011	7,390,143	3.53E-03	26,060.6	13.0	4,039.4	2.4E-02	179,166.6	89.6	1,881.2
2012	7,328,736	3.53E-03	25,844.1	12.9	4,005.8	2.4E-02	177,677.9	88.8	1,865.6
Natural Gas-Firing									
2008	17,299	2.20E-04	3.8	0.002	0.6	2.2E-03	38.1	0.019	0.4
2009	62,588	2.20E-04	13.8	0.007	2.1	2.2E-03	137.9	0.069	1.4
2010	22,968	2.20E-04	5.1	0.003	0.8	2.2E-03	50.6	0.025	0.5
2011	25,014	2.20E-04	5.5	0.003	0.9	2.2E-03	55.1	0.028	0.6
2012	27,436	2.20E-04	6.0	0.003	0.9	2.2E-03	60.5	0.030	0.6
Total									
2008	--	--	--	--	13.10	4,061.6	--	--	90.1	1,891.7
2009	--	--	--	--	12.90	4,000.4	--	--	88.7	1,863.5
2010	--	--	--	--	12.99	4,027.1	--	--	89.3	1,875.7
2011	--	--	--	--	13.03	4,040.2	--	--	89.6	1,881.8
2012	--	--	--	--	12.93	4,006.8	--	--	88.9	1,866.3

[a] Based on AOR data; see Table 1.

[b] Table C-2, Subpart C, 40 CFR 98. Emission factors in kg/MMBtu were converted to lb/MMBtu by multiplying by 2.204.

[c] N_2O and CH_4 are multiplied by a factor of 310 and 21, respectively, to determine CO_2 equivalence.

Table 5 (Rev. 1). Wheelbrator North Broward Annual Average Emissions for Burners 1, 2 & 3 for Each Consecutive Two-Year Period, 2008-2012

	Annual Emissions for MWC Units 1, 2 & 3					Two-Year Average Emissions			
Pollutant	2008 (tons)	2009 (tons)	2010 (tons)	2011 (tons)	2012 (tons)	2008-2009 (tons)	2009-2010 (tons)	2010-2011 (tons)	2011-2012 (tons)
NO_x	1,373.2	1,344.0	1,375.3	1,365.2	1,345.0	1,358.6	1,359.7	1,370.2	1,355.1
CO	60.5	70.0	96.7	90.1	68.3	65.3	83.3	93.4	79.2
SO_2	134.2	142.3	180.1	128.1	116.0	138.2	161.2	154.1	122.1
VOC	11.7	11.3	11.2	11.8	11.3	11.5	11.2	11.5	11.5
PM	6.5	5.6	5.8	3.5	5.2	6.0	5.7	4.7	4.4
PM_{10}	6.5	5.6	5.8	3.5	5.2	6.0	5.7	4.7	4.4
$PM_{2.5}$ [a]	6.5	5.6	5.8	3.5	5.2	6.0	5.7	4.7	4.4
SAM [b]	20.5	21.8	27.6	19.6	17.8	21.2	24.7	23.6	18.7
D/F	1.80E-05	1.20E-05	1.00E-05	6.00E-06	3.00E-06	1.50E-05	1.10E-05	8.00E-06	4.50E-06
Hyd. Chloride	66.0	61.8	72.8	80.1	70.8	63.9	67.3	76.5	75.5
Fluorides	0.31	0.32	0.33	0.35	0.11	0.31	0.32	0.34	0.23
Lead	1.98E-02	1.18E-02	4.37E-02	2.06E-03	3.67E-03	1.58E-02	2.77E-02	2.29E-02	2.86E-03
Mercury	0.04	0.04	0.03	0.03	0.04	3.87E-02	3.51E-02	3.03E-02	3.57E-02
CO_2	743,231.0	734,403.9	737,211.0	739,725.8	733,732.8	738,817.4	735,807.4	738,468.4	736,729.3
N_2O [c] (CO_2e)	4,061.6	4,000.4	4,027.1	4,040.2	4,006.8	4,031.0	4,013.7	4,033.7	4,023.5
CH_4 [c] (CO_2e)	1,891.7	1,863.5	1,875.7	1,881.8	1,866.3	1,877.6	1,869.6	1,878.8	1,874.0

[a] Assuming equal to PM_{10} emissions.

[b] Not reported in AORs - based on assuming 10% of SO_2 converts to SO_3, all of which converts to SAM.

[c] Calculated based on actual annual heat input - see Table 3.

Source: Annual Operating Report (AOR) for 2008 - 2012

Table 6: Potential Emissions from LFG (8,100 scfm maximum and 6,000 scfm average), Wheelabrator North Broward, Broward County, Florida

Pollutants	Emission Factor	Ref.	Activity Factor[a] LFG Flow (scfm)	LFG Heating Value (Btu/scf)	LFG Methane Content (%)	Heat Input (MMBtu/hr)	Operating Hours	Uncontrolled Emissions from Each MWC Unit (lb/hr)	Control Efficiency (%)	Controlled Emissions Hourly from 3-MWC Units (lb/hr)	Controlled Emissions Annual from 3-MWC Units (TPY)[b]
Carbon Monoxide (CO)	5.7 lb/10^6 scf CH_4	c	2,700	480	48	77.8	8,760	0.44	–	1.3	4.3
Nitrogen Oxides (NOx)	33 lb/10^6 scf CH_4	c	2,700	480	48	77.8	8,760	2.57	70%	2.3	7.5
Particulate Matter (PM)	8.2 lb/10^6 scf CH_4	d	2,700	480	48	77.8	8,760	0.64	–	1.9	6.2
Particulate Matter (PM_{10})	8.2 lb/10^6 scf CH_4	d	2,700	480	48	77.8	8,760	0.64	–	1.9	6.2
Particulate Matter ($PM_{2.5}$)	8.2 lb/10^6 scf CH_4	d	2,700	480	48	77.8	8,760	0.64	–	1.9	6.2
Non-Methane Organic Compounds (NMOC)	595 ppmv	e	2,700	480	48	77.8	8,760	21.88	98%	1.3	4.3
Volatile Organic Compounds (VOC)	595 ppmv, NMOC	f	2,700	480	48	77.8	8,760	21.88	98%	1.3	4.3
Sulfur Dioxide (SO_2)	2,800 ppmw, S	g	2,700	480	48	77.8	8,760	72.58	95%	10.9	35.3
Sulfuric Acid Mist	5% of S	g	2,700	480	48	77.8	8,760	5.56	95%	0.8	2.7
GHGs											
Greenhouse Gases-Combustion											
CO_2	114.762 lb/10^6 MMBtu	h	2,700	480	48	77.8	8,760	8,923.91		26,771.7	86,859.4
Methane (CH_4) (as CO2e)	7.05E-03 lb/10^6 MMBtu	h	2,700	480	48	77.8	8,760	11.52		34.6	112.1
Nitrous Oxide (N_2O) (as CO2e)	1.39E-03 lb/10^6 MMBtu	h	2,700	480	48	77.8	8,760	33.47		100.4	325.8
Greenhouse Gases-Passthrough	1.16E-01 lb/scf	i	2,700	480	37	77.8	8,760	6,947.28		20,841.9	67,620.2

[a] Activity factors are based on average LFG flow of 2,700 scfm per MWC unit maximum; annual average is 6,000 scfm with LFG heating value of 480 Btu/scf, HHV.

[b] Annual emissions based on an average LFG flow of 6,000 scfm. Control of NOx is 70%, SO_2 and HCL is 95%, and control of NMHC and VOC is 98%.

[c] Based on AP-42, Chapter 2.4, Table 2.4-5 (October 1998).

[d] Based on AP-42, Chapter 2.4 (October, 1998), Table 2.4-5. PM and $PM_{2.5}$ emissions are assumed to be equal to estimated PM_{10} emissions.

[e] NMOC emission rate is based on compliance with NSPS Subpart WWW, which requires 98% reduction of NMOC emissions.

NMOC emissions calculated as following:

LFG NMOC concentration =	595	ppmv, based on AP-42 Chapter 2.4.
LFG gas flow into flare =	2,700	scfm, design LFG flow.
Standard Temperature =	60	°F
Molecular weight of NMOC as hexane =	86.18	lb/lb-mol (AP-42 table 2.4-1)
Uncontrolled NMOC emissions (lb/hr) =	21.88	lb/hr, NMOC (ppmv actual) x Volume flow (acfm) x 86.18 (MW of NMOC) x 2116.2 lb/ft2 (pressure) / [1545.4 (gas constant, R) x Actual Temp. (°R)] x 60 min/hr
Flare destruction efficiency =	98.0	%, based on NSPS Subpart WWW requirement and AP-42 Chapter 2.4, Table 2.4-3.
Controlled NMOC emissions (lb/hr) =	0.44	lb/hr, Uncontrolled emissions x (1 - destruction efficiency/100)

[f] 100% of NMOC assumed as VOC.

[g] SO_2 emission rate is based on H_2S concentration in LFG and design LFG flow rate into the flare.

LFG S concentration =	2,800	ppmw, based on engineering estimates.
LFG gas flow into flare =	2,700	scfm, design LFG flow.
LFG gas density =	0.08	lb/ft^3, estimated
Standard Temperature =	60	°F
Uncontrolled SO_2 emissions (lb/hr) =	72.58	lb/hr, S (ppmw) x (1/1,000,000) x Volume flow (scfm) x Density (lb/ft^3) x 60 min/hr x MW of SO2/MW of H2S
Controlled SO_2 emissions (lb/hr) =	3.6288	lb/hr SO2; 95% control

[h] Combustion of landfill gas based on Part 98 Tables C-1 and C-2. N2O and CH4 are multiplied by a factor of 310 and 21, respectively, to determine CO2 equivalence.

[i] Includes CO2 content of LFG that will pass through without getting combusted. 37 percent based on engineering estimate.

Table 7. Wheelabrator North Broward PSD Applicability for Biosolids and LFG

Pollutant	Baseline (Maximum 2-Year Average Actual) Emissions[a] (TPY)	MSW Projected Actual Heat Input[b] (MMBtu/yr)	MSW Maximum Emission Rates[c] (lb/MMBtu)	Projected Actual Emissions from MSW[d] (TPY)	Projected Actual Emissions from LFG[e] (TPY)	Total Projected Actual Emissions (MSW+LFG)[f] (TPY)	Increase/Decrease in Annual Emissions[g] (TPY)	PSD Significant Emission Rates (TPY)
NO_x	1,370.24	6,287,448	0.3723	1,170.27	7.49	1,177.8	-192	40
CO	93.39	6,287,448	0.0262	82.27	4.31	86.6	-7	100
SO_2	161.16	6,287,448	0.0487	153.22	35.32	188.5	27	40
VOC	11.52	6,287,448	0.0032	9.97	4.26	14.2	3	40
PM	6.05	6,287,448	0.0017	5.49	6.21	11.7	6	25
PM_{10}	6.05	6,287,448	0.0017	5.49	6.21	11.7	6	15
$PM_{2.5}$	6.05	6,287,448	0.0017	5.49	6.21	11.7	6	10
SAM	24.68	6,287,448	0.0075	23.46	2.70	26.2	1	7
MWC Organics[h]	1.50E-05	6,287,448	4.83E-09	1.52E-05	0.00	1.52E-05	1.97E-07	3.50E-06
MWC Acid Gases[h]	237.61	6,287,448	0.0703	221.11	35.32	256.4	18.8	40
Fluorides	0.34	6,287,448	9.41E-05	0.30	0.00	2.96E-01	-0.044	3
Lead	0.03	6,287,448	1.18E-05	0.04	0.00	3.72E-02	0.009	0.6
Mercury	0.04	6,287,448	1.21E-05	0.04	0.00	3.79E-02	-0.001	0.1
GHGs								
Combustion GHGs:								
CO_2	738,817.41	6,287,448	199.60	627,501.0	86,859.44	714,360.4		
N_2O (as CO_2e)	4,033.66	6,287,448	1.091	3,429.18	112.10	3,541.3		
CH_4 (as CO_2e)	1,878.75	6,287,448	0.508	1,597.17	325.79	1,923.0		
Pass-Through GHGs:								
CO_2	--	--	--	--	67,620.23	67,620.2		
Total GHGs (CO_2e)	744,729.8			632,527.3	154,917.5	787,444.9	42,715.0	75,000

[a] Maximum 2-Year average emissions - see Table 5.

[b] Project heat input of MSW based on 85% of the average heat Input (see Table 1) based on LFG displacing heat input from MSW.

[c] Maximum emission rates in lb/MMBtu - see Table 3. Emission factors for N_2O and CH_4 based on maximum lb/MMBtu calculated from Table 4.

[d] Projected actual emissions for MSW are the project heat input from MSW times maximum MSW emission rates.

[e] Projected actual emissions for LFG from Table 6. Note for GHG the pass-through CO2 are not included.

[f] Total projected actual emissions are the sum of projected actual emissions from MSW and LFG.

[g] Projected actual emissions minus baseline actual emissions.

[h] MWC Organics are D/F emissions and MWC Acid Gases are HCl and SO_2. See Tables 2, 3 and 5.

APPENDIX A

Biosolids Co-Combustion

Combustion Test Report

Wheelabrator Westchester Facility

Peekskill, New York

June 11 – June 18, 2012

Wheelabrator Technologies Inc.

A Waste Management Company

Revision 0

July 9, 2012

Table of Contents

I. Objective

The objective of the combustion test is to demonstrate the viability of co-combusting biosolids at the Wheelabrator Westchester Facility.

Biosolids were supplied from the Yonkers Wastewater Treatment Plant (WWTP) and delivered by truck to the Westchester Facility. The biosolids were off loaded into a dedicated area of the tipping floor adjacent to the temporary biosolids feed equipment. A skid steer loader continuously fed the biosolids into a hopper/feed screw/piston pump arrangement that conveyed the biosolids through piping to the No.3 boiler refuse charging hopper, where it was mixed with the municipal solid waste (MSW). Performance was monitored relative to boiler operation, air emissions, and ash quality.

This report documents the combustion test results.

II. Test Location

The combustion test was conducted at Wheelabrator's Westchester Facility.

Address: One Charles Point Avenue
Peekskill, NY 10566

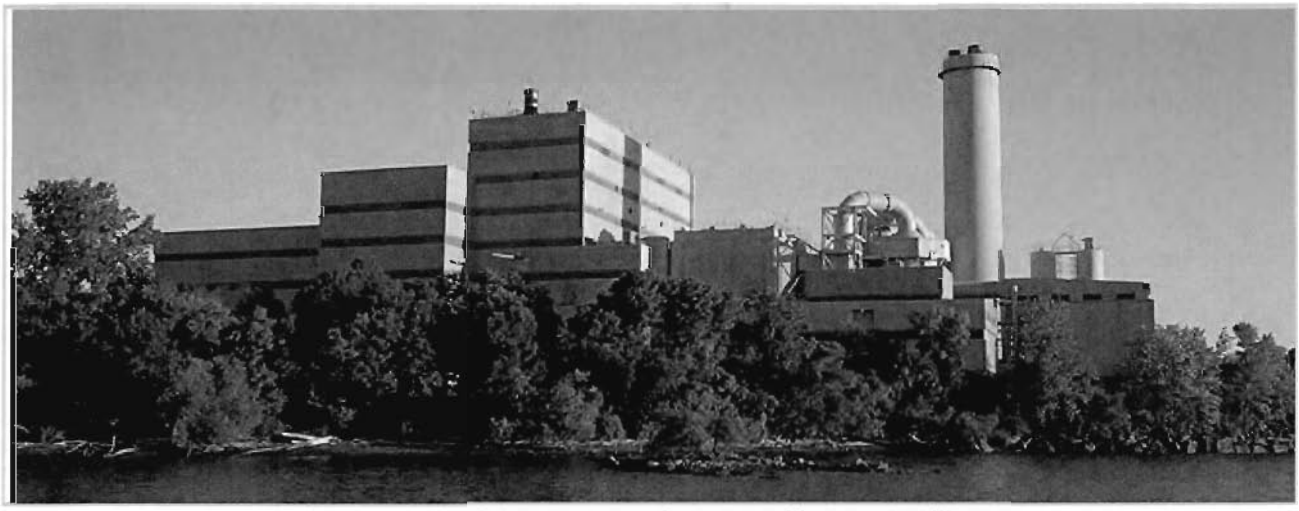


Figure 1 - Wheelabrator Westchester Facility, Peekskill, NY

III. Project Team

Individuals on the Project Team are listed below. The Wheelabrator Project Managers for the combustion test are Mark Reuss/Tom Penna.

Westchester County Contacts:

Jagdish Mistry	Director - Wastewater Treatment	914.813.5437	jmmt@westchestergov.com
Charles Becket	Yonkers WWTP Supervisor	914.231.2847	ccbb@westchestergov.com

WTI Contacts:

Vincent Langone	Regional Manager	203.579.2212	vlangone@wm.com
Roger Anderson	Director, Engineering	603.929.3275	randerson@wm.com
Mark Reuss	Project Manager	603.929.3413	mreuss@wm.com
Tom Penna	Project Manager	603.929.3140	tpenna@wm.com
Jim Connolly	Senior Manager, Environmental	603.929.3267	jconnol1@wm.com
Dave Smith	H&S Programs Manager	570.847.7887	dsmith1@wm.com
Jay Berry	Senior Manager, Environmental	603.753.8411	jberry@wm.com
Bob Brynes	Environmental Compliance Manager	518.747.2390	rbrynes@wm.com
Brett Baker	Westchester Operations Manager	914.739.9304	bbaker1@wm.com
Michael Idiagbor	Westchester Environmental Manager	914.739.9304	mldiagbo@wm.com
Dave Paine	Westchester Maintenance Manager	914.739.9304	dpaine@wm.com
David Wright	Westchester Financial Analyst	914.739.9304	dwrigh17@wm.com
Art Campbell	Westchester Lead Supervisor	914.739.9304	acampbell@wm.com
Gary Rafeal	Regional Maintenance Manager	978.265.9052	grafeal@wm.com
Jose Seco	Westchester Shift Supervisor	914.739.9304	jseco@wm.com
Justin Carpenter	Performance Analyst	603.929.3230	jcarpen4@wm.com

IV. Test Description

Three (3) combustion tests using a blend of biosolids and MSW were conducted in Boiler No. 3, starting June 12 and ending June 15, 2012. Complete testing was conducted over a seven (7) day period.

The overall test included two (2) days for before and after baseline testing. The test was comprised of the following, with biosolids quantities calculated based on % by weight of a total throughput average of 700 TPD MSW:

Test No.	Biosolids %	Biosolids Quantity	Estimated MSW Quantity	Test Date
Test #1:	0%	Base Line Case	700 Tons	June 11
Test #2:	5%	35 Tons	722 Tons	June 12
Test #3:	10%	70 Tons	745 Tons	June 13
Test #4:	15%	105 Tons	767 Tons	June 14
Test #5:	0%	Base Line Check	700 Tons	June 18
Total Test Quantity		210 Tons	3634 Tons	

Note that the MSW for Test #2, 3, and 4 are calculated tonnages based on maintaining the required heat input for normal superheat steam flow conditions (biosolids heat value was tested at 1875 BTU/lb).

Each combustion test was conducted for approximately 24 hours. It was assumed that the blend for any particular combustion test must be fed continuously for a minimum period of two (2) hours prior to the establishment of steady-state conditions. Tests #1 through 4 were conducted on consecutive days. After Test #4, the boiler returned to firing 100% MSW. The boiler was operated for three (3) days before Test #5 commenced. This was done to ensure that biosolids material had been completely processed through the boiler.

Biosolids Storage

Through arrangements with City Carting, a local hauling company, the Yonkers WWTP supplied biosolids for testing via 30 yard roll off trucks. Note that Wheelabrator requested 40 yard roll offs be provided with 25 tons of biosolids per load. City Carting did not provide a reason for the change in container size and load weight.

Refuse pit Bays 10 - 12 were cordoned off with concrete barriers and the biosolids were unloaded onto the tipping floor in this area. The storage area had the capacity of 2 to 3 truck loads. Each truck delivery was weighed in and out at the Westchester Facility weigh scale to obtain a precise weight of actual delivered product.

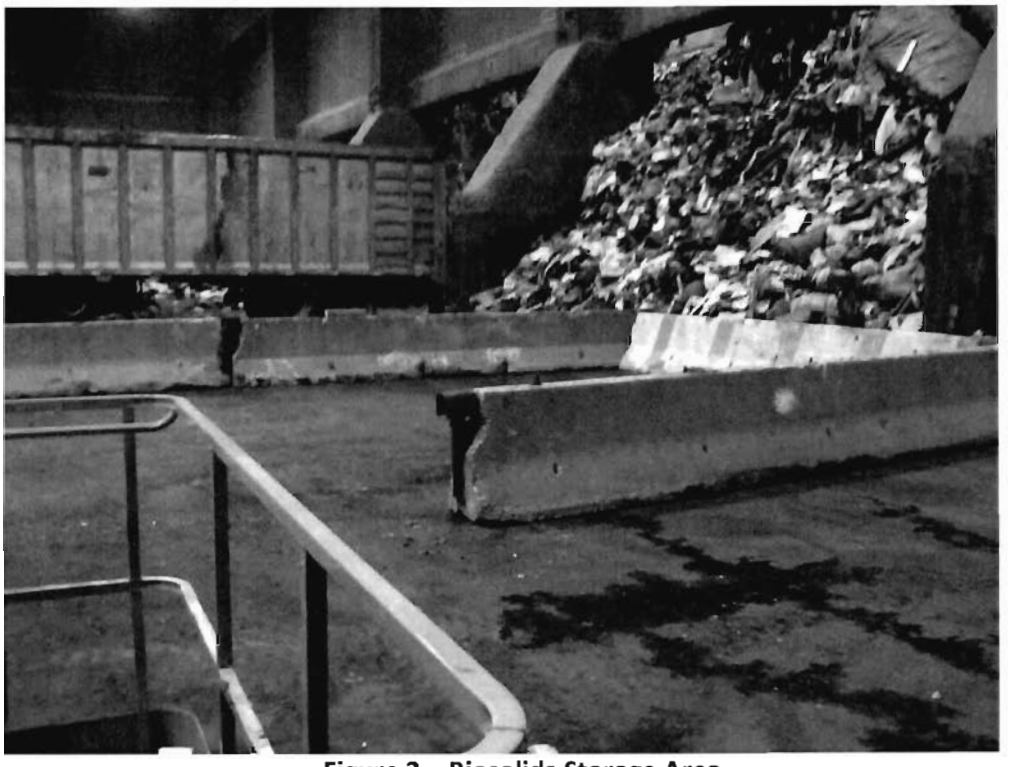


Figure 2 – Biosolids Storage Area

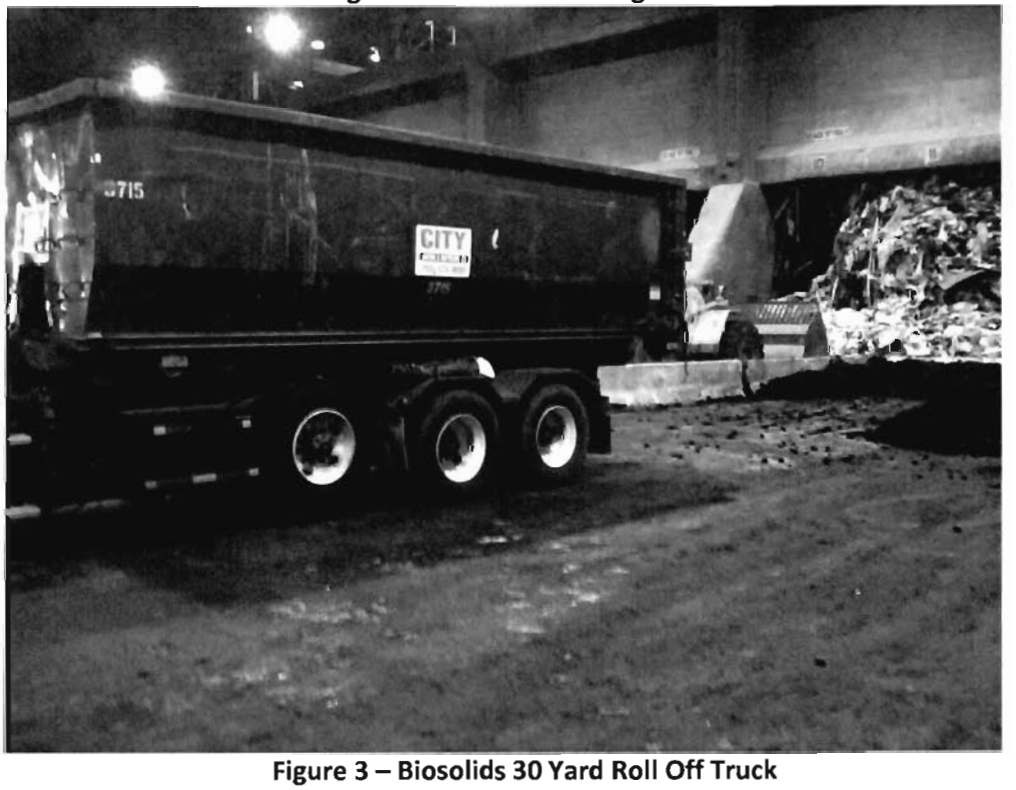


Figure 3 – Biosolids 30 Yard Roll Off Truck

Figure 4 – Biosolids Delivery

Feed Equipment

The temporary feed system was comprised of a screw feeder, screw feeder hopper, and piston pump, supplied by Schwing Bioset. The equipment was located at the northwest corner of the tipping floor, adjacent to the biosolids storage area.

The screw feeder and piston pump were powered by a separate hydraulic unit. A 480V/200 amp generator was rented to supply power to the hydraulic unit. Generator fuel deliveries were scheduled on a daily basis to maintain continuous operations. Cooling water was provided to the hydraulic unit oil cooler. Water was also required to replace the pump seal box water on a daily basis.

The main control panel was mounted on the hydraulic skid. The pump and screw speed were adjusted during testing to obtain the required biosolids flow rate. Instrumentation was provided with the biosolids feed equipment. All other instrumentation utilized during testing was permanent plant instrumentation.

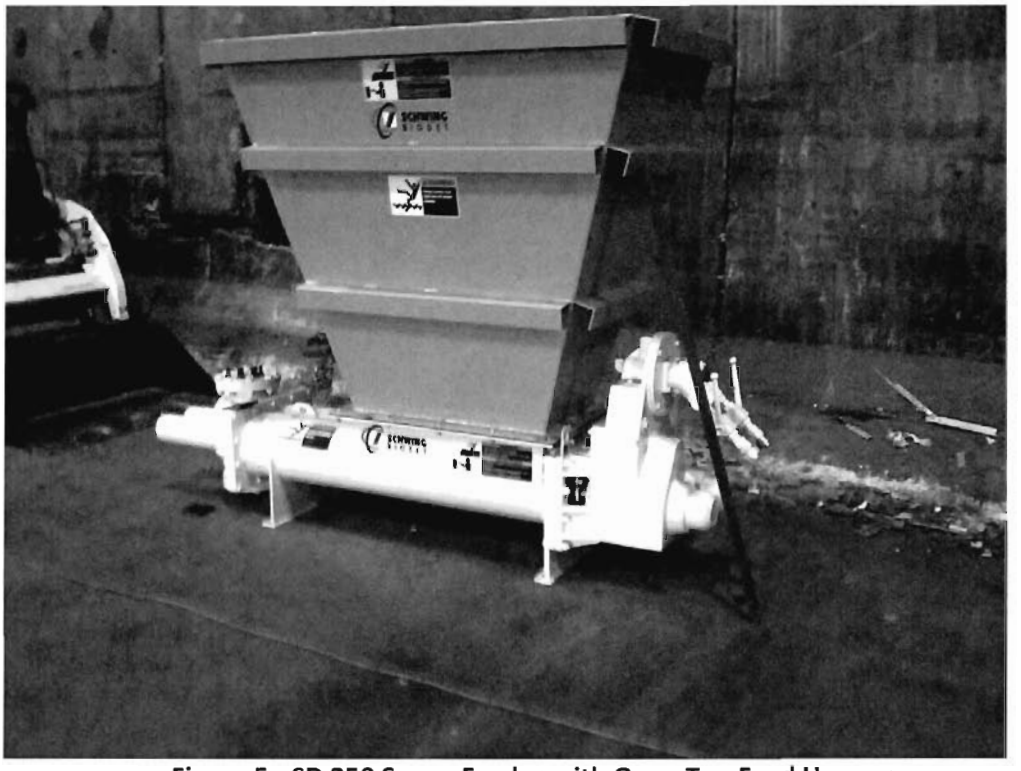


Figure 5 - SD 250 Screw Feeder with Open Top Feed Hopper

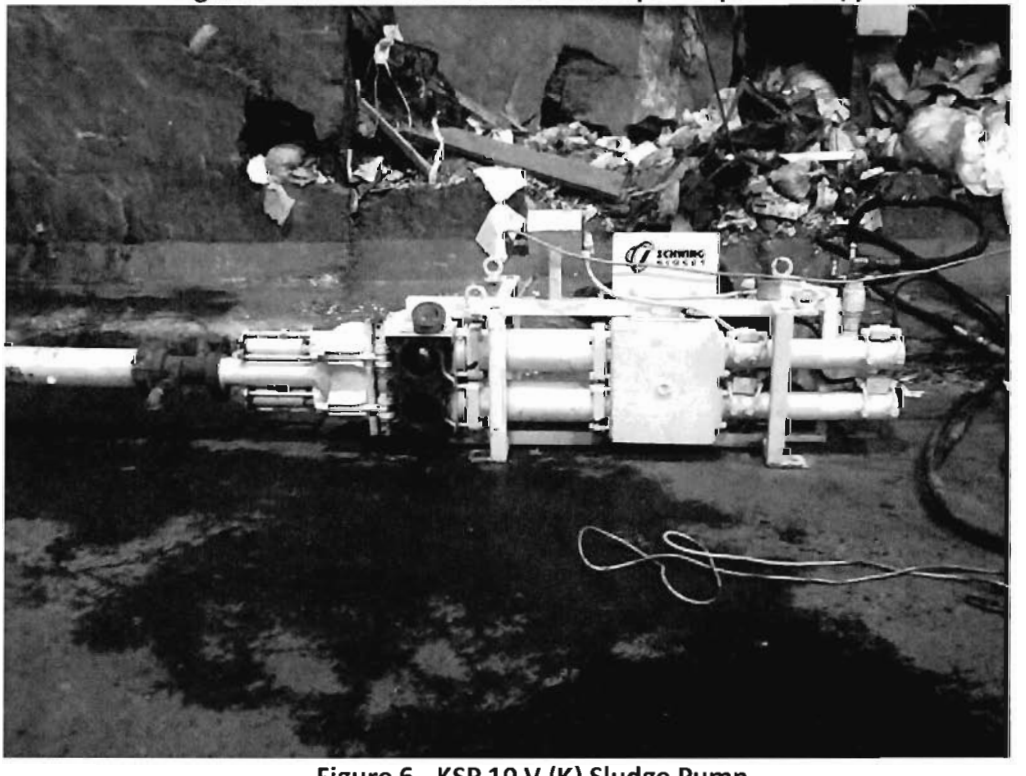


Figure 6 - KSP 10 V (K) Sludge Pump

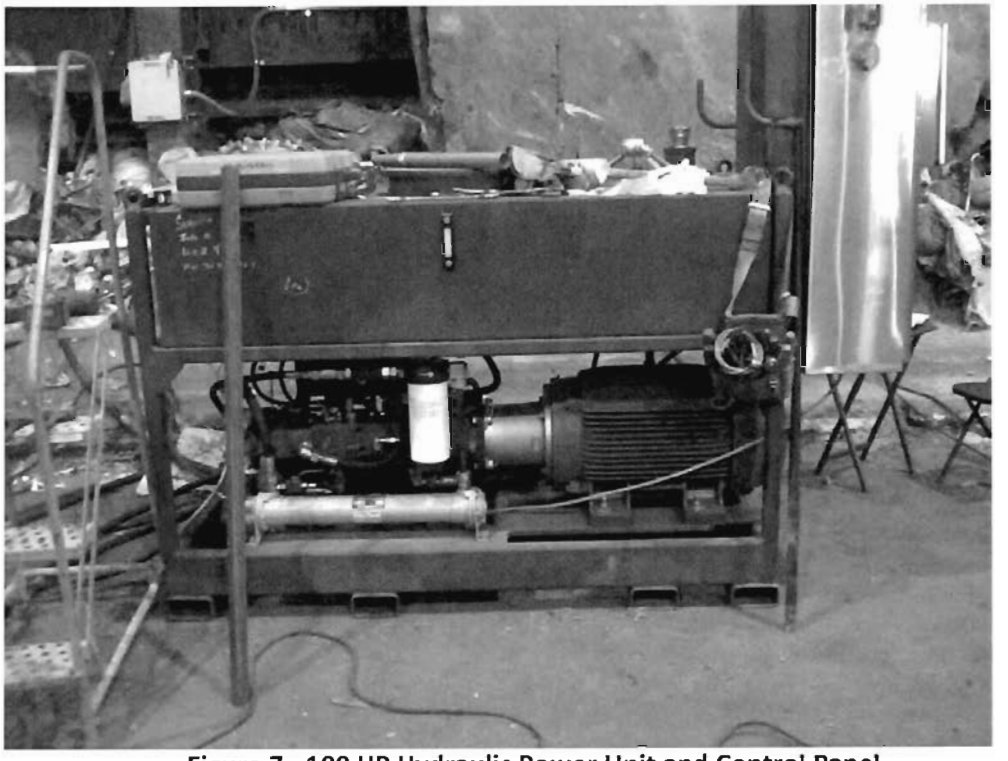


Figure 7 - 100 HP Hydraulic Power Unit and Control Panel

Figure 8 – 480V/200 Amp Generator

Figure 9 – Screw/Pump Control Screen

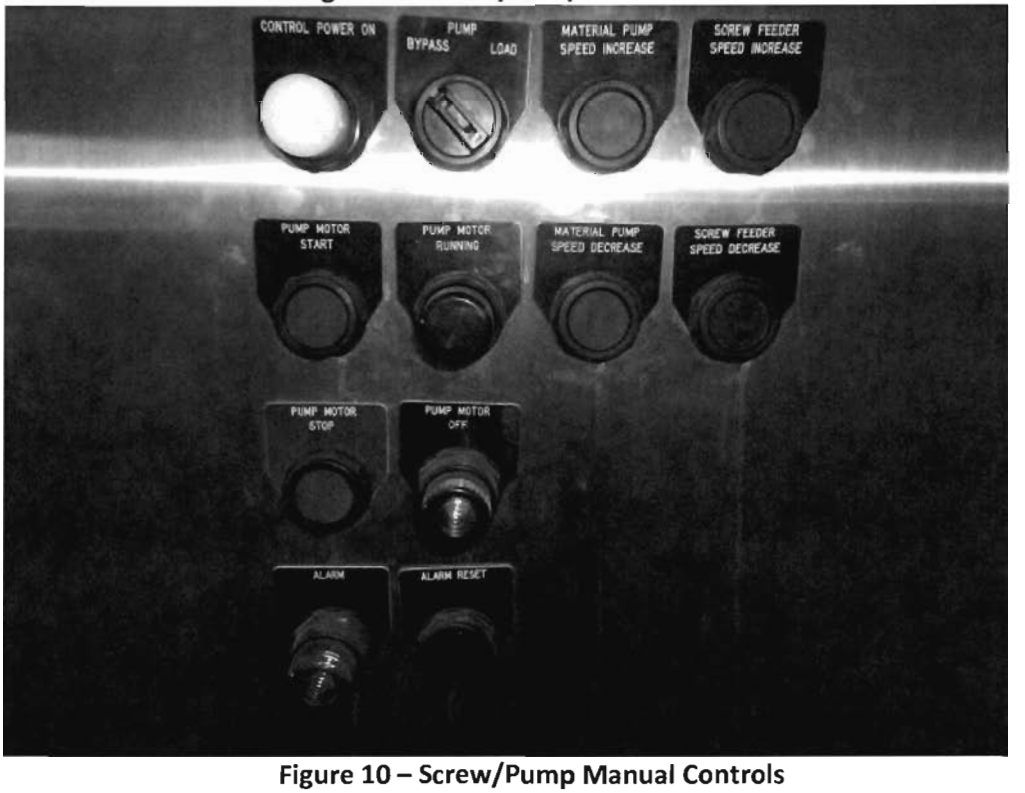


Figure 10 – Screw/Pump Manual Controls

Feed System

A skid steer loaded biosolids from storage pile to the screw feeder hopper. Due to the size of the hopper (36" W x 62" L x 56" H – approximately 40 ft^3capacity) supplied by Schwing, the skid steer had to be fitted with a 4 foot wide bucket. The biosolids were then pumped via 170 feet of 6" piping into the No. 3 Boiler refuse charging hopper through a distribution header. Based on an average MSW throughput of 700 TPD, the required biosolids flow rate was calculated to be 6 gpm, 12 gpm, and 18 gpm, for Test #2, #3, and #4, respectively. Flow rates were checked by manually counting the pump strokes and drawdown time for the hopper. The manual valves on the distribution header were adjusted to evenly distribute biosolids across the charging hopper.

Figure 11 – Skid Steer Feeding Screw Hopper

Figure 12 – Overhead View of Storage and Feed Equipment

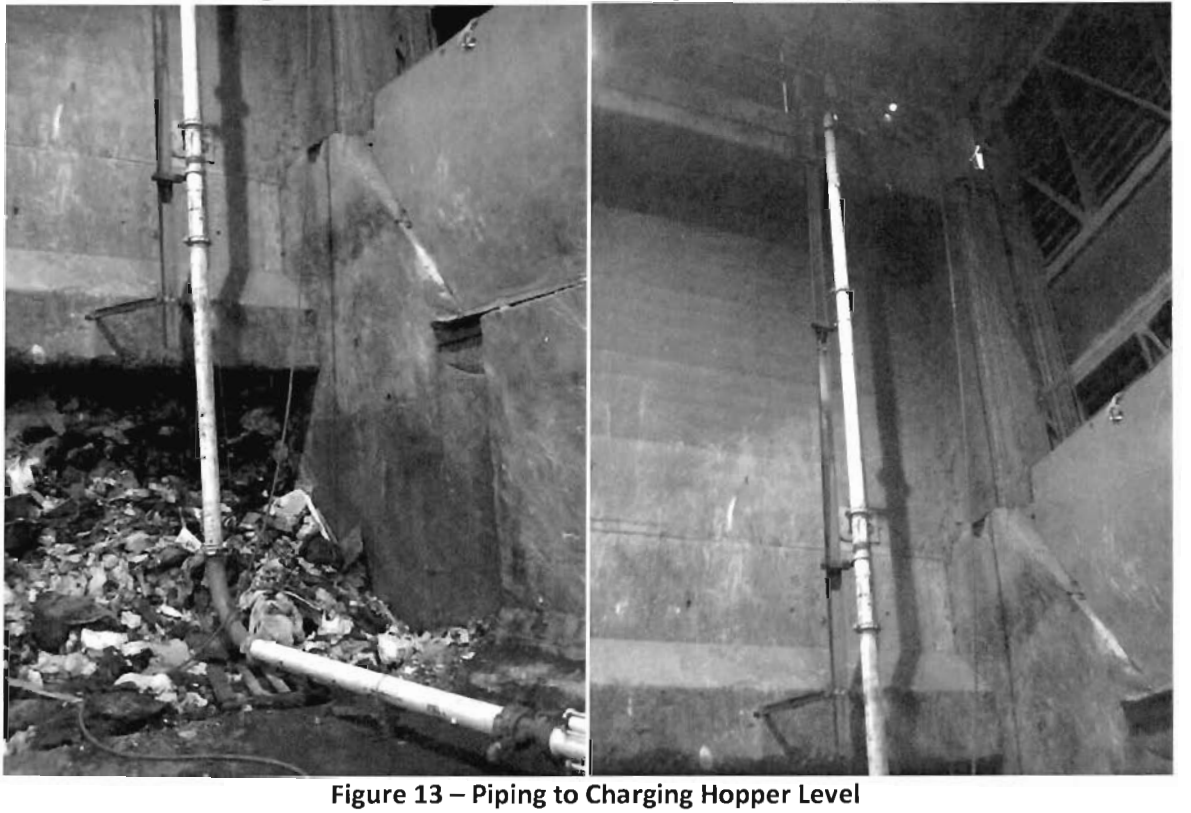


Figure 13 – Piping to Charging Hopper Level

Figure 14 – Piping from Tipping Floor

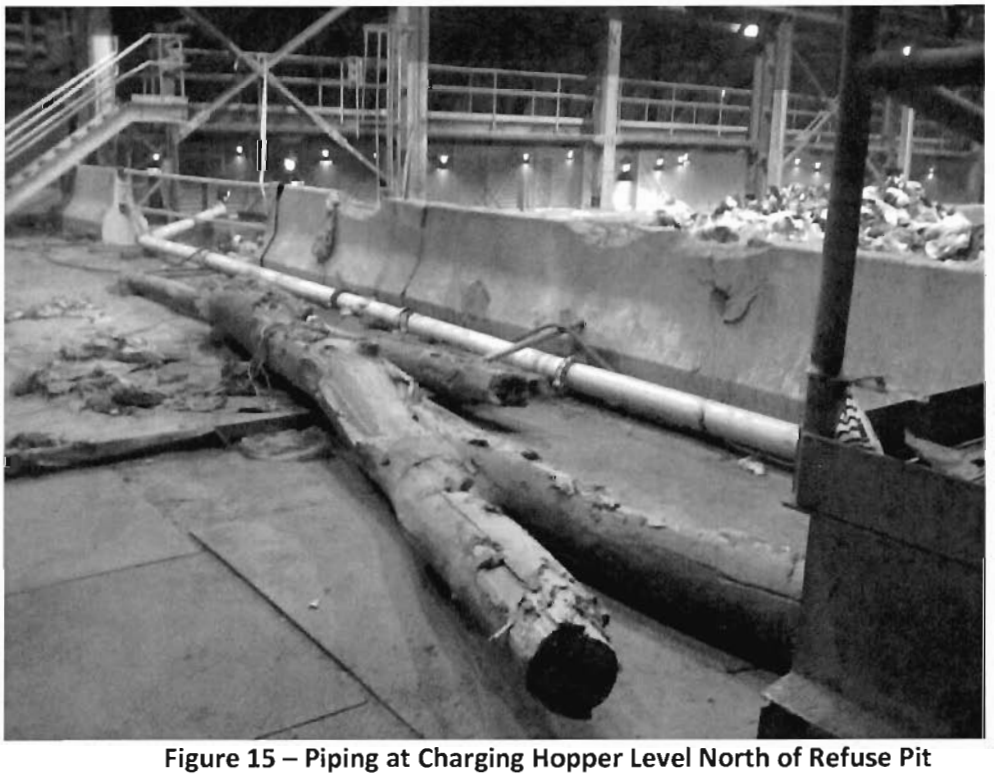


Figure 15 – Piping at Charging Hopper Level North of Refuse Pit

Figure 16 – Piping to Charging Hopper

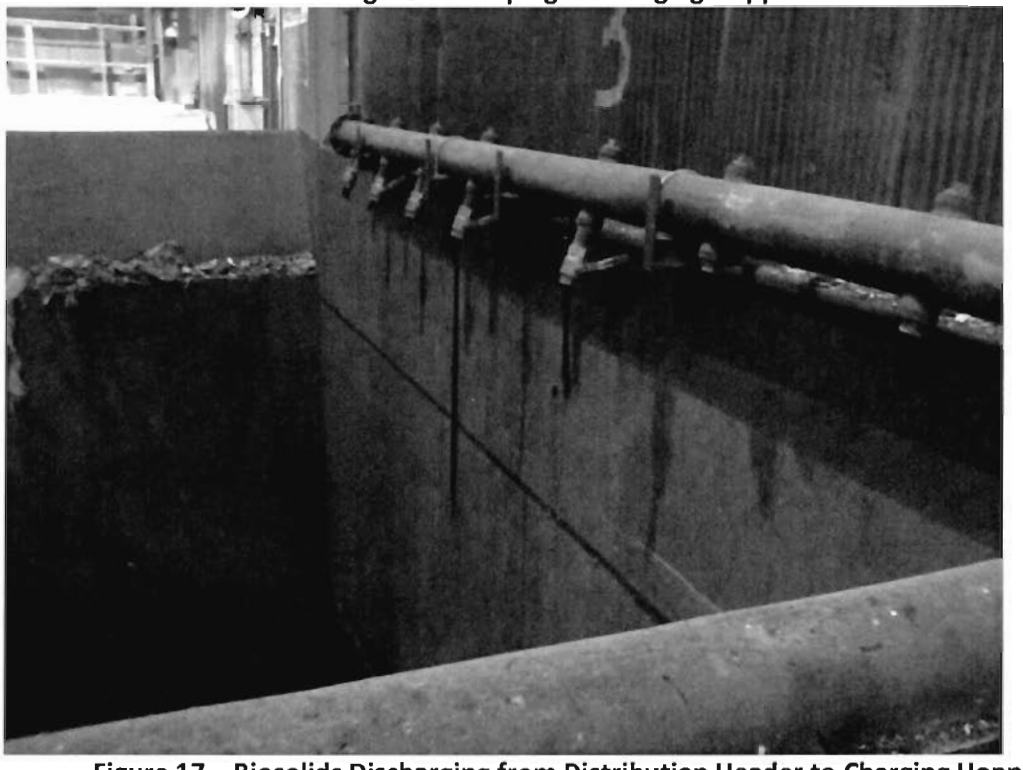


Figure 17 – Biosolids Discharging from Distribution Header to Charging Hopper

The week prior to testing, the Schwing Bioset equipment and piping was received on site and installed by the Wheelabrator NERM group and Westchester personnel. The NERM group fabricated the distribution header off site and installed the same week as the equipment. Schwing provided two (2) field technicians to assist with installing the equipment and provide training. The first load of biosolids was received on June 6, and after hydro testing the piping, the equipment was successfully tested with biosolids.

During each 24 hour test period, Westchester operations personnel received the biosolids loads, loaded the feed system hopper, adjusted the distribution header valves, greased the feed equipment, changed the pump seal box water, and monitored the feed equipment controls and boiler operations. The control room operators maintained the test record sheets noting any abnormal operations.

At the end of testing, Westchester personnel introduced water into the hopper to blow down the residual biosolids into the charging hopper. NERM and Westchester personnel dismantled, cleaned, and loaded out the Schwing test equipment and piping.

V. Weigh Scale Data

The actual quantity of biosolids received from the Yonkers WWTP for Test No. 2, 3, and 4 was 197 tons. This was short 13 tons of the calculated throughput required for testing. This was due to City Cart not being able to provide the required number of trucks to supply biosolids for Test No. 4. Approximately 2 tons of material was used on June 7 for testing the equipment, therefore Test No. 4 was short by 15 tons, or one truck load. The following table summarizes receipt of the biosolids. On June 6, one 30 yard roll off was dropped off at Westchester and was unloaded on June 7 using another truck. The net weight could not be verified by the Westchester truck scale receipts, so the weight from the Yonkers WWTP truck scale receipt was used.

Table 1 – Biosolids Weigh Scale Data

Ticket Date	Ticket ID	Solids Content	Material	Tons
6/6/2012	671804	26%	BIOSOLIDS	17.58
6/11/2012	672406	24%	BIOSOLIDS	15.17
6/12/2012	672638	23%	BIOSOLIDS	15.64
6/13/2012	672869	23%	BIOSOLIDS	16.47
6/13/2012	672873	23%	BIOSOLIDS	16.45
6/13/2012	673032	23%	BIOSOLIDS	16.13
6/13/2012	673034	23%	BIOSOLIDS	16.10
6/14/2012	673059	27%	BIOSOLIDS	15.72
6/14/2012	673069	27%	BIOSOLIDS	19.14
6/14/2012	673129	27%	BIOSOLIDS	15.17
6/14/2012	673137	27%	BIOSOLIDS	15.59
6/14/2012	673208	27%	BIOSOLIDS	17.53
Material Total	12			196.69

VI. PI Data and Test Notes

Test data was obtained via the plant PI data acquisition system for various boiler operating parameters. Based on the PI data, graphs were developed showing the various parameters over the entire test period and for the same parameter for each test over a 24 hour period - refer to Attachment A.

The following table summarizes the PI data points using average values monitored during testing:

Table 2 – PI Data Averaged Values

Parameter	Test #1	Test #2	Test #3	Test #4	Test #5
Grate Speed, %	78.6	81.9	87.5	90.8	85.4
Ram Speed, %	67.8	72.1	76.2	73.9	78.0
Combustion Temperature, °F	1526.0	1523.2	1515.0	1494.6	1611.7
Furnace Draft, inches water	0.03	0.05	-0.02	0.00	-0.08
Steam Flow, klbs/hr	185.0	185.2	184.5	182.3	184.9
Steam Pressure, psi	875.2	875.2	875.1	874.9	867.0
Steam Temperature, °F	840.0	840.4	841.8	841.2	837.5
Primary Air Flow, KSCFM	45.4	43.0	43.5	46.4	40.0
Secondary Air Flow, KSCFM	22.6	22.8	26.0	26.3	25.3
ID Fan Amps	104.5	106.4	101.7	105.5	99.2
Urea Flow, gph	3.5	3.5	5.5	8.4	2.2
MSW Processed, TPD	726.2	727.2	727.5	720.7	726.6
Biosolids Processed, % MSW Throughput	0.0	4.8	9.6	14.6	0.0

Note that the data for Test #4 represents the conditions prior to the biosolids feed pump malfunction at 22:00. From 22:00 to 04:00, the pump was operating at half of the set flow rate.

The control room operator maintained test sheets during testing to record note any deviations from normal operations. Refer to Attachment B. The following is a summary of notes and observations from the control room and operations during testing:

Test No. 2 – June 12

- At start of the test, approximately 47 tons were on the tipping floor.
- The Schwing control panel display was not accurate, there were times that the strokes, GPM, and % speed were off. The stroke and flow were off by a factor of 2 and the speed % off by ½. The pump speed was ramped up to 100%. The pump was operating at approximately 8 strokes per minute (SPM) per manual count, or about 20 GPM. The pump should put out twice that flow.
- The flow rate keeps fluctuating – difficult to maintain a consistent stroke speed. Schwing said to keep the stroke rate at least 2.5 - 3 SPM. If the pump strokes go below 2 SPM, sometimes there are issues with the hydraulics.
- One pump cylinder operates at a different flow rate than the other. Schwing said to keep the targeted flow rate in between the low and high pump cylinder flows.
- Schwing will be on site June 13 to correct problems.
- There is an alarm for the transition pressure transmitter – was not supplied, so no issue.
- Filling the hopper about half way without any bridging.
- Seems to be less flow readout issues when there is material above the screw.

- At conclusion of Test No. 2, there should be about 10 tons on the floor. Will need two trucks in the morning and two trucks tomorrow afternoon (60 tons). Test No. 3 will pump a total of 70 tons.
- Does not appear to be any issues with the boiler operation, CEMS, or ash burnout.
- Night shift noticed the hydraulic oil temperature at 60 C.
- Night shift had to keep opening the distribution header valves to maintain even flow.
- Control room reported no abnormal conditions. Steam deviations were minimal and adjusted.

Test No. 3 – June 13

- Schwing on site – adjusted magnetic pickups on pump and the milliamp range – the test low and maximum flows are at the low end of range. Control panel appeared to be reading accurately after adjustments. Operated at maximum test flow rate of 18 gpm (pump speed at 80%).
- Schwing recommended connecting water to hydraulic cooler. After connecting water, hydraulic oil maintained a 46 C temperature.
- After Schwing left site, the control panel screen went blank. Re-booted the screen power and screen came back. No interruption to operations.
- Found some debris in one of the biosolids deliveries large enough to plug the distribution header nozzles. Contacted Yonkers WWTP and requested that they inspect and remove debris prior to loading biosolids into the roll offs.
- On nightshift, one of the hydraulic line fittings came loose. It was tightened and spill report filed.
- Nightshift had to keep clearing distribution header nozzles.
- The hydraulic unit tripped at 0130 (June 14). It was restarted and no alarms were displayed.
- Nightshift noticed an ammonia smell in the plant near Boiler No. 3 and at the ash pit.
- At 0615 (June 14), the upper pump cylinder actuator started to leak. Used speedy dry to contain.
- Control room reported burning well with minor adjustments. Minor adjustments to maintain steam load, no abnormal conditions.

Test No. 4 – June 14

- Dayshift verified ammonia odor on second and third floor in front of Boiler No. 3. A hand held detector was used to identify the presence of ammonia, but the actual reading was below measurement levels.
- At about 22:00, the control panel display screen went blank. The system seemed to still be pumping at the set rate.
- It was then noticed that the feed rate had slowed down and the distribution header nozzles were not flowing at the same rate. After checking the pump, it was determined that the

lower cylinder actuator was not stroking. The system was only pumping at half flow (9 gpm).

- At 04:00 (June 15), the poppet valve started working again. It may have been blockage that eventually cleared itself.
- At 06:00 (June 15), ran out of biosolids.
- Added water to the screw hopper to flush out the system.
- Control room reported burning well with minor adjustments with air to first zone. Overall air increase by 4 on air bias. Decreased first zone speed 0.58 to 0.48. Increased grate speed bias to 22.

For Test # 1 and #5, no unusual operating conditions were noted. The air pre-heaters were in service prior to testing. The gas burners were not used.

VII. Air Emissions

The Westchester Facility's stack CEMS provided air quality monitoring during each of the five (5) trial combustion tests for SO_2, NO_X, CO, and opacity. The following table summarizes the PI data points using average values monitored during testing.

Table 3 – CEMS/COMS Averaged Values

Parameter	Permit Limit	Test #1	Test #2	Test #3	Test #4	Test #5
SO_2, ppm	29	21.3	21.4	23.1	14.7	18.9
NO_X, ppm	184	156.3	156.4	174.6	172.2	164.5
CO, ppm	100	15.3	15.0	15.7	18.1	15.1
Opacity, %	10	1.2	1.2	0.8	1.2	1.3

The data for the various parameters are discussed in more detail below:

SO_2

Per the Title V air permit, SO_2 levels must be least stringent of 29 ppmv corrected to 7% O_2 dry basis or 77% reduction by weight or volume of potential SO_2 emission concentration, as measured continuous (CEMS).

During Test #1 (base line test – no biosolids), the average SO_2 level was 21.3 ppm. There were brief instances where the limit was exceeded, with a maximum level of 149.8 ppm during the test period.

During Test #2, the average SO_2 level was 21.4 ppm. There were brief instances where the limit was exceeded, with a maximum level of 90.2 ppm during the test period.

During Test #3, the average SO_2 level was 23.1 ppm. There were brief instances where the limit was exceeded, with a maximum level of 97 ppm during the test period.

During Test #4, the average SO_2 level was 14.7 ppm. There were brief instances where the limit was exceeded, with a maximum level of 89.4 ppm during the test period. Note that the data for Test #4 represents the conditions prior to the biosolids feed pump malfunction at 22:00.

During Test #5 (base line test – no biosolids), the average SO_2 level was 18.9 ppm. There were brief instances where the limit was exceeded, with a maximum level of 116.7 ppm during the test period.

NO_X

Per the Title V air permit, CO must be below 184 ppmv corrected to 7% O_2 dry basis, as measured continuous (CEMS).

During Test #1 (base line test – no biosolids), there were a few brief instances where the limit was exceeded. Considering all data points, the average NO_X level for Test #1 was 156.3 ppm.

During Test #2, similar to Test #1, there were a few brief instances where the limit was exceeded. Considering all data points, the average NO_X level for Test #1 was 156.4 ppm.

During Test #3, there appears to be more instances of higher levels and brief instances where the limit was exceeded. Considering all data points, the average NO_X level for Test #3 was 174.6 ppm.

During Test #4, similar to Test #3, there appears to be more instances of higher levels and brief instances where the limit was exceeded. Considering all data points, the average NO_X level for Test #3 was 172.2 ppm. Note that the data for Test #4 represents the conditions prior to the biosolids feed pump malfunction at 22:00.

During Test #5 (base line test – no biosolids), there were brief instances where the limit was exceeded. Considering all data points, the average NO_X level for Test #1 was 164.5 ppm.

CO

Per the Title V air permit, CO must be below 100 ppmv corrected to 7% O_2 dry basis, as measured continuous (CEMS).

During Test #1 (base line test – no biosolids), CO attained levels of up 1294 ppm for a brief interval. Not considering these high values, the average CO level for Test #1 was 15.3 ppm.

During Test #2, there were short periods where CO levels were ranged from 278 – 1378 ppm. Ignoring the values for the two periods, the average CO level for Test #2 was 14.95 ppm.

During Test #3, similar to Test #1, there were short periods where the CO levels ranged from 701 to 1291 ppm. Ignoring the values for this period, the average CO level for Test #3 was 15.67 ppm.

During Test #4, similar to the preceding tests, there were periods where the CO levels ranged from 784 to 1392 ppm (the high levels occurred every 24 hours during testing – may be due to instrument calibration). There were four more brief instances where the CO levels were 197 ppm, 272 ppm, 394 ppm, and 120 ppm. Ignoring the values for this period, the average CO level for Test #4 was 18.12 ppm. Note that the data for Test #4 represents the conditions prior to the biosolids feed pump malfunction at 22:00.

During Test #5 (base line test – no biosolids), similar to Test #1, CO attained levels of up 1411 ppm for a brief intervals. Not considering these high values, the average CO level for Test #1 was 15.1 ppm.

Opacity

Per the Title V air permit, opacity must be below 10%, as measured continuous (COMS).

During Test #1 (base line test – no biosolids), the average opacity level was 1.2%.

During Test #2, the average opacity level was 1.2%.

During Test #3, the average opacity level was 0.8%.

During Test #4, the average opacity level was 1.2%. Note that the data for Test #4 represents the conditions prior to the biosolids feed pump malfunction at 22:00.

During Test #5 (base line test – no biosolids), the average opacity level was 1.3%.

VIII. Ash Quality

The combined bottom ash and fly ash was sampled and analyzed for each combustion test and the bottom ash visually examined to confirm biosolids burnout.

Ash was disposed of in the same manner as during normal operations - transported to the WM Shrewsbury, MA landfill.

The ash analysis reports indicate that all samples were below regulatory levels. Though during Test #4 it was observed that the Boiler No. 3 burnout zone had some smoldering ash, Ash Building

operations did not observe any identifiable biosolids in the ash. The ash was consistent with normal operation.

Refer to Attachment C for test report.

IX. Conclusions and Recommendations

Conclusions

The following conclusions are based on review of the test data:

Boiler Operations

- Average combustion temperature decreased as the quantity of biosolids introduced the boiler increased. Note that the highest solids content was during Test #4 (27%). The delta between Test #1 and Test #4 was 31 °F and 116 °F between Test #5 and Test #4. The true effect of MSW on the combustion temperature is not known due to the absence of moisture content data, though the MSW processed during the test was not unusually wet.
- It was predicted based on the test plan calculation spreadsheets that there would be a heat input deficit that would increase as the quantity of biosolids increased. The heat input deficit would result in a decrease of steam flow (predicted maximum of 10% during Test #4). There was a slight decrease (1%) in average superheater steam flow observed as the quantity of biosolids increased. During Test #4, there was a brief period of time when the steam flow decreased 28% from the Test #1 average. During Test #3, there was a similar brief period of lower steam flow.
- The average superheater steam temperature and pressure was relatively constant throughout testing.
- There was an increase in secondary air flow of approximately 15% for Test #3 and #4, compared to Test #1 and #2. Primary air flow fluctuated throughout testing, though the average flow rate for Test #4 was slightly higher. ID fan amperage was less constant during Test #3 and #4, compared to Test #1 and #2. There was a decrease in amperage during Test #3 that increased throughout Test #4.
- Grate speed increased as the quantity of biosolids increased. The effect on ram speed was less discernible.
- As stated above, it was predicted based on the test plan calculation spreadsheets that there would be a heat input deficit which would result in additional MSW required to make up for the deficit (predicted maximum of 67 TPD at 15% biosolids – Test #4). Based on the tonnage reported, the predicted increase in MSW processed was not evident.
- Furnace draft pressure range varied more during Test #3 and #4 and tended to be more negative, compared to Test #1 and #2.

Air Emissions

- There was an increase in NO_x emissions of approximately 12% during Test #3 and #4, as compared to Test #1 and #2. The average emission rate of 172 and 174 ppm for Test #3 and #4 were below the permit limit of 184 ppm. Corresponding to the increase in NO_x emissions was an increase in the urea flow rate of 2.4x, comparing Test #1 and Test #4 average flow rate (3.5 gph to 8.4 gph). This may have contributed to the ammonia odor detected at the boiler during Test #3 and #4.
- Opacity appeared to be unaffected throughout testing.
- SO_2 appeared to be unaffected throughout testing with the average emission rate slightly lower for Test #4 compared to the other test periods.
- Each test period experienced a brief period of excessive CO emissions. Not factoring in these occurrences, the CO emission rate stayed somewhat constant, with a slight increase during Test #4.

Ash Quality

Based on the results of the combustion test ash analysis, the ash was non-hazardous. No biosolids was observed in the ash pit.

Recommendations

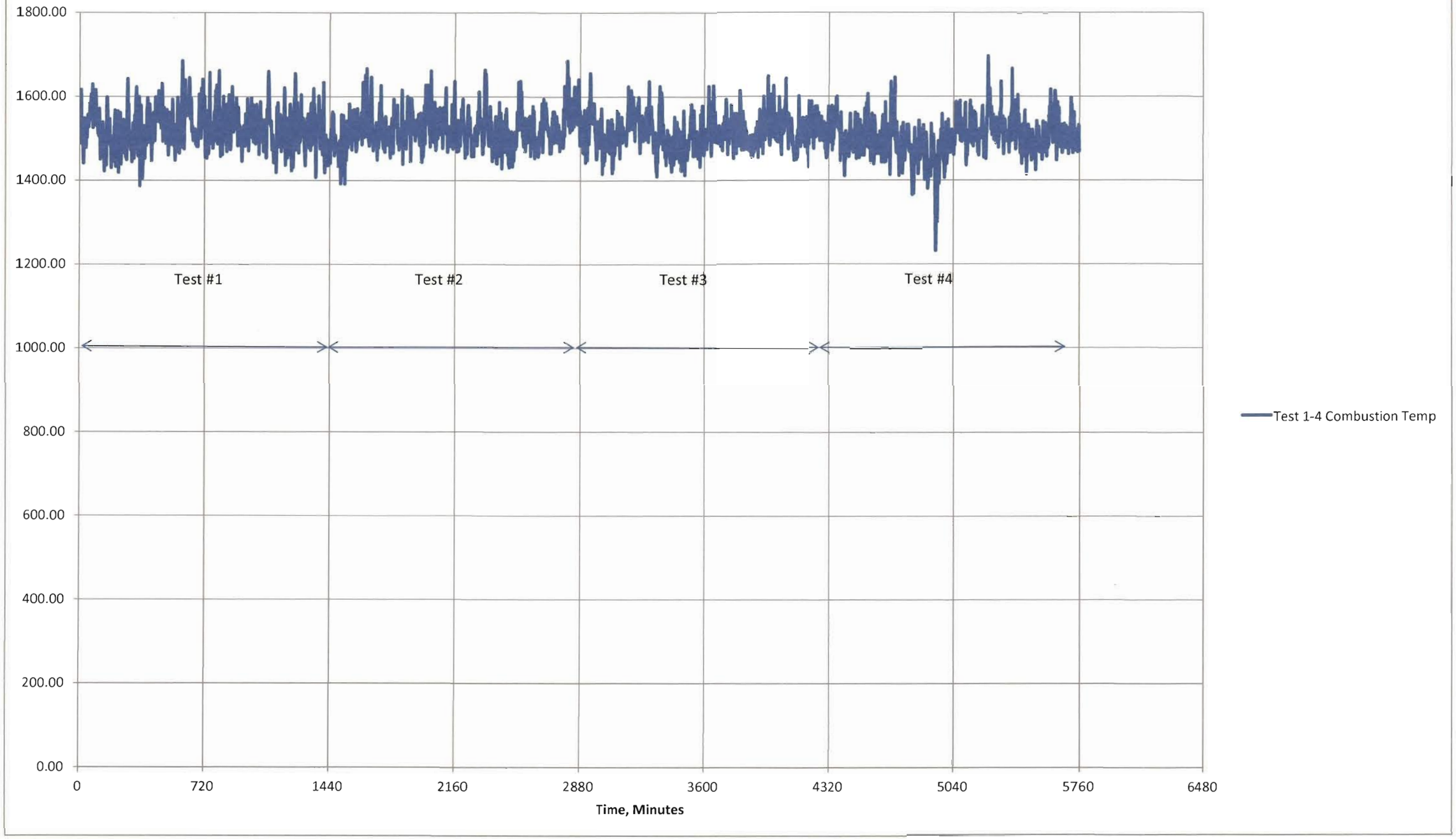
- Mott MacDonald, the consulting engineer that is conducting the boiler performance review for Westchester and Portsmouth, should look at the impact of biosolids (nitrogen content) on the formation of NO_x.
- Mott MacDonald should review the impact of the biosolids as received heat value on heat input and the need for additional MSW to make up for the heat input deficit.
- For future testing, the header design should consider more nozzles (in the event that nozzles get plugged) and nozzles with a larger diameter (to reduce the potential for plugging).
- For future testing, need to ensure equipment supplier makes the necessary equipment checks at the factory and the equipment is sized properly. The Schwing equipment experienced mechanical and electrical issues in the field and the hydraulic unit was oversized for the pump and screw.
- For future testing, ammonia levels at the tipping floor and boiler should be monitored prior to, during, and after testing.
- For future testing, the test duration should be over two or more weeks to account for the variability of the MSW.
- During the upcoming Boiler No. 3 outage, a cursory boiler inspection should be performed to determine if there are any obvious impacts from the combustion testing. Issues such as boiler slag, scaling, and corrosion related to testing will be difficult to discern from normal operation.

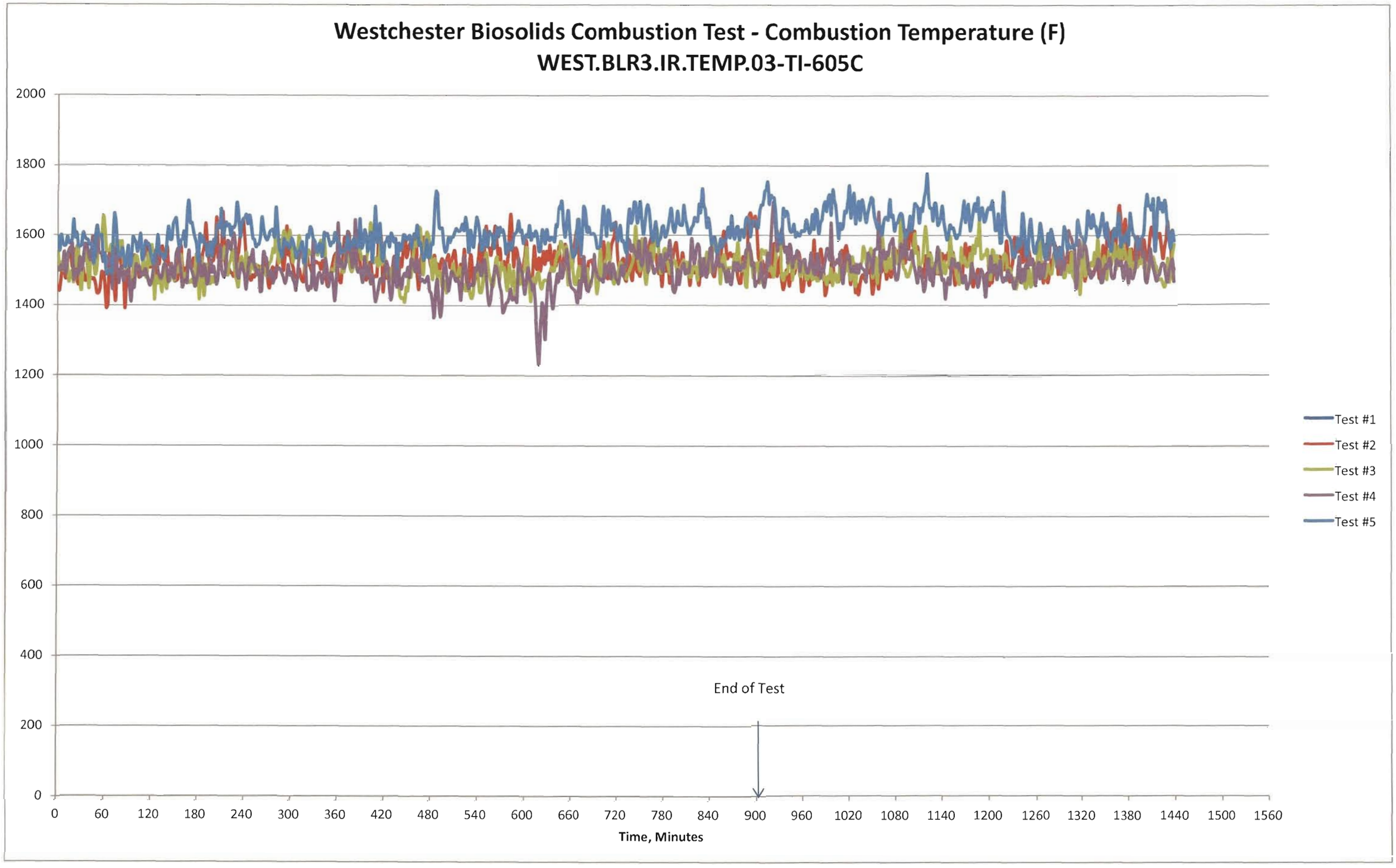
- If a permanent installation is to be considered, touring existing installations in Europe to see successful operations is recommended.

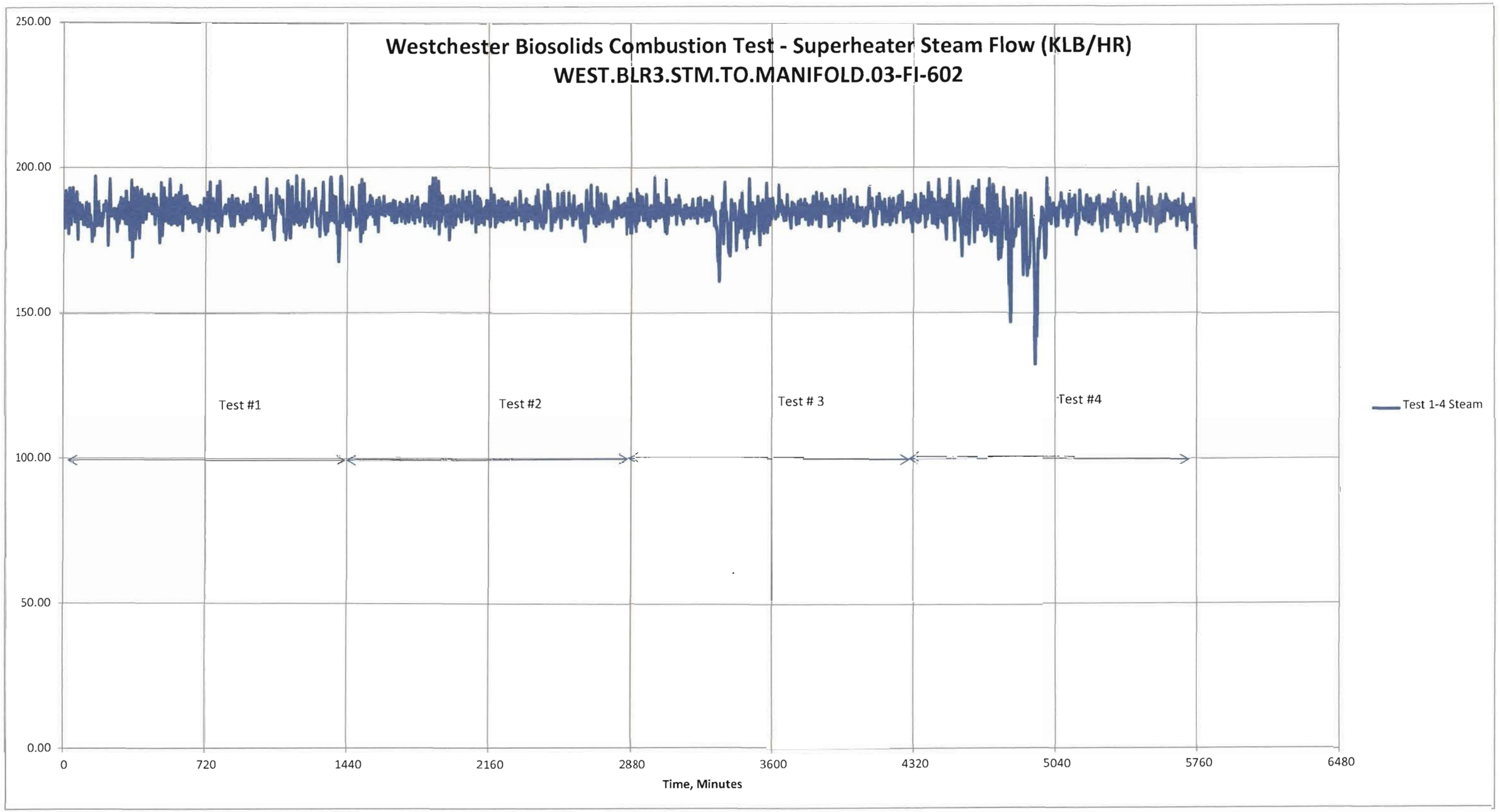
ATTACHMENTS

ATTACHMENT A – PI DATA GRAPHS

Westchester Biosolids Combustion Test - Combustion Temperature (F)
WEST.BLR3.IR.TEMP.03-TI-605C




Westchester Biosolids Combustion Test - Combustion Temperature (F)
WEST.BLR3.IR.TEMP.03-TI-605C
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0
60
120
180
240
300
360
420
480
540
600
660
720
780
840
900
960
1020
1080
1140
1200
1260
1320
1380
1440
1500
1560
Time, Minutes
End of Test
Test #1
Test #2
Test #3
Test #4
Test #5


Westchester Biosolids Combustion Test - Superheater Steam Flow (KLB/HR)
WEST.BLR3.STM.TO.MANIFOLD.03-FI-602
250.00
200.00
150.00
100.00
50.00
0.00
Test #1
Test #2
Test # 3
Test #4
Test 1-4 Steam
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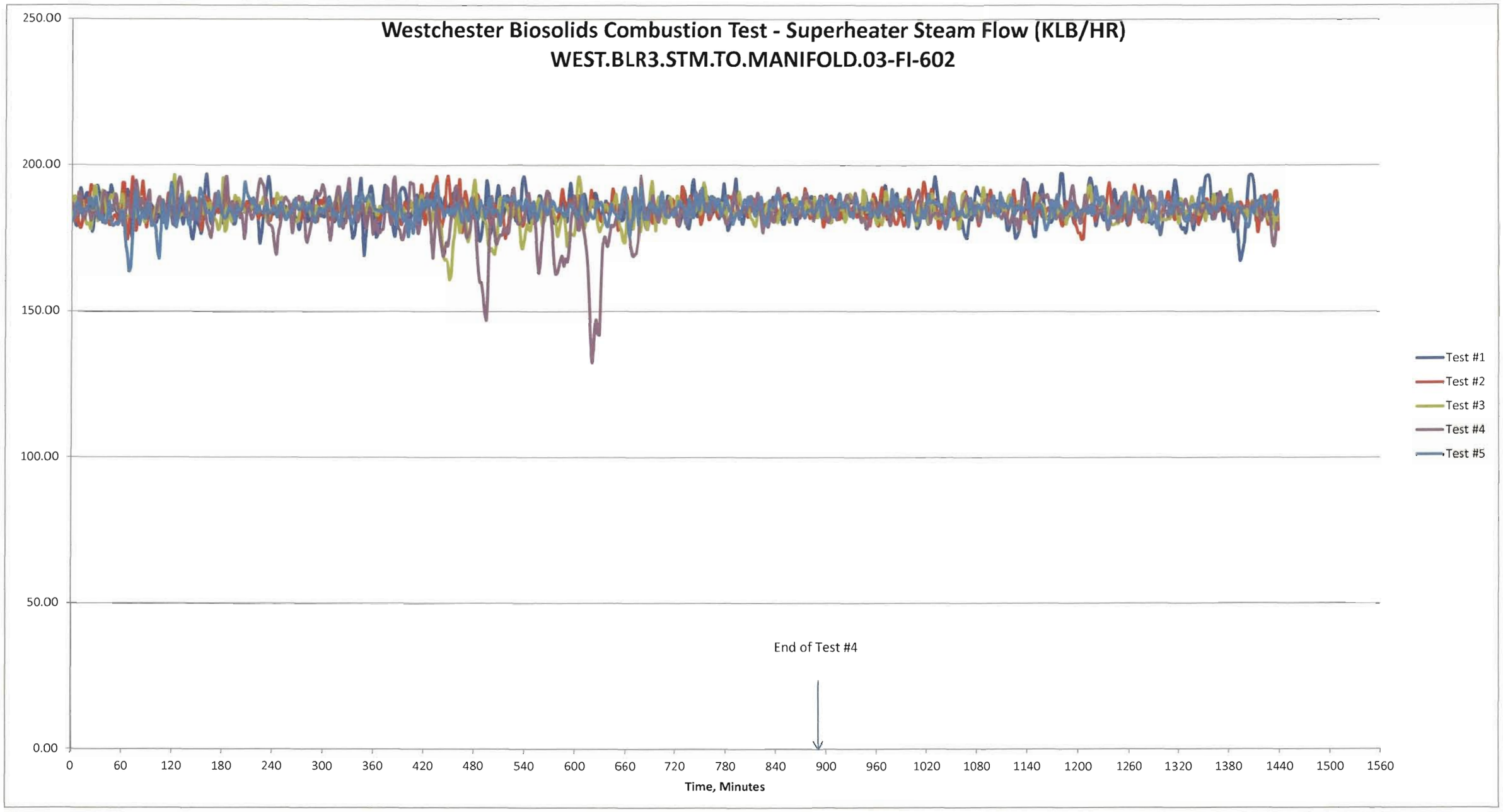
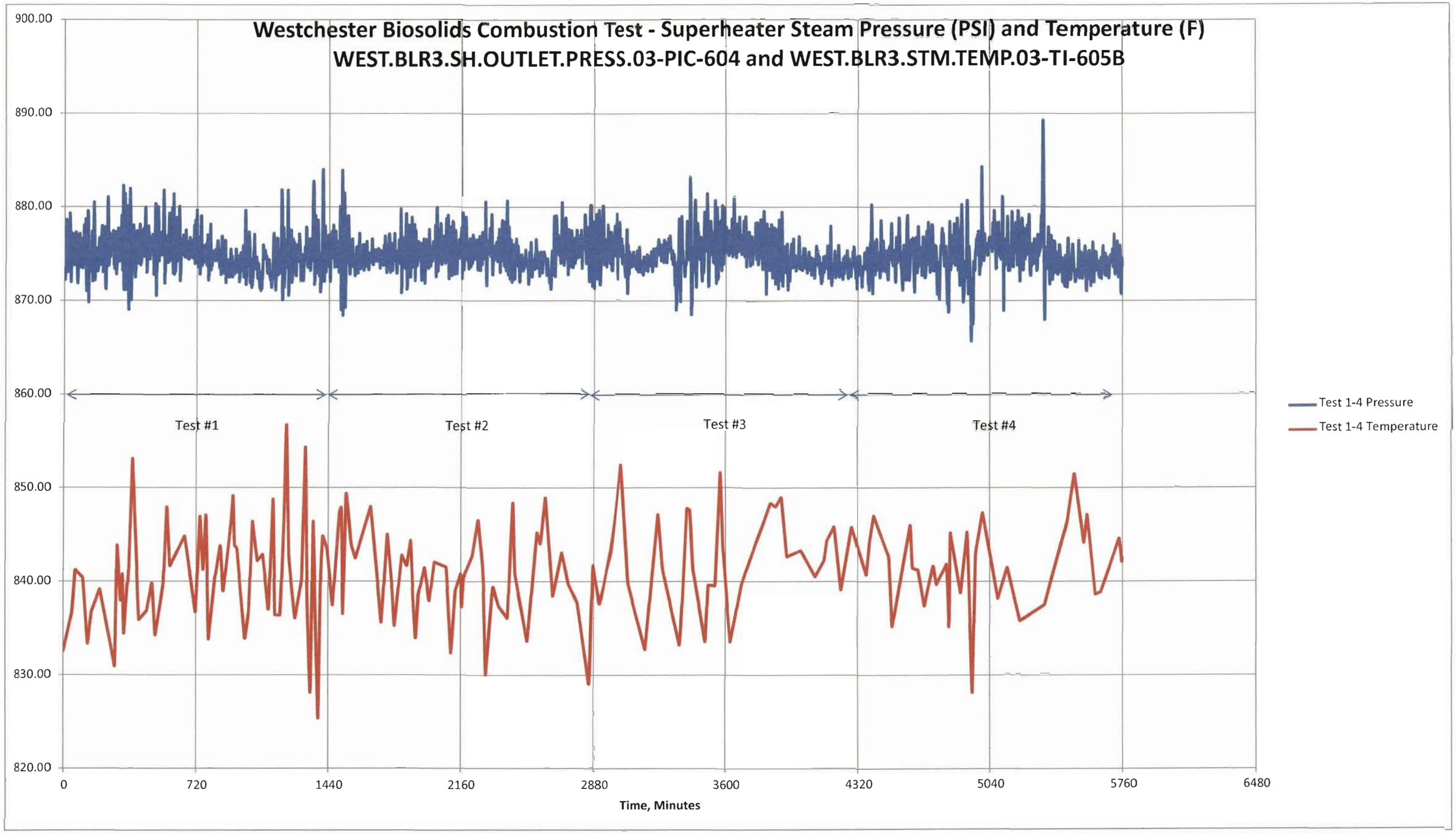
720
1440
2160
2880
3600
4320
5040
5760
6480
Time, Minutes


Westchester Biosolids Combustion Test - Superheater Steam Flow (KLB/HR)
WEST.BLR3.STM.TO.MANIFOLD.03-FI-602
250.00
200.00
150.00
100.00
50.00
0.00
0
60
120
180
240
300
360
420
480
540
600
660
720
780
840
900
960
1020
1080
1140
1200
1260
1320
1380
1440
1500
1560
Time, Minutes
End of Test #4
Test #1
Test #2
Test #3
Test #4
Test #5


Westchester Biosolids Combustion Test - Superheater Steam Pressure (PSI) and Temperature (F)
WEST.BLR3.SH.OUTLET.PRESS.03-PIC-604 and WEST.BLR3.STM.TEMP.03-TI-605B
900.00
890.00
880.00
870.00
860.00
850.00
840.00
830.00
820.00
Test #1
Test #2
Test #3
Test #4
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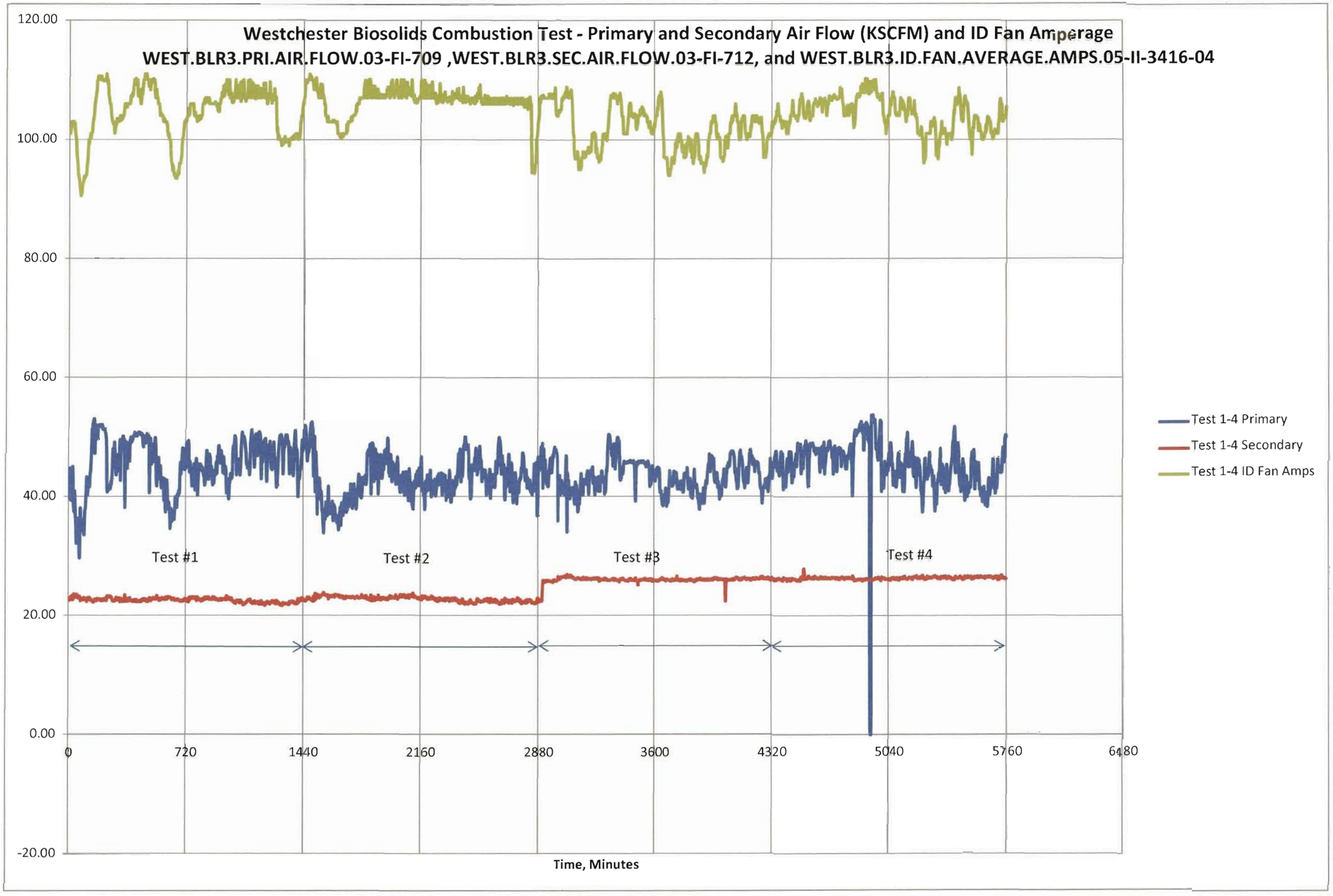
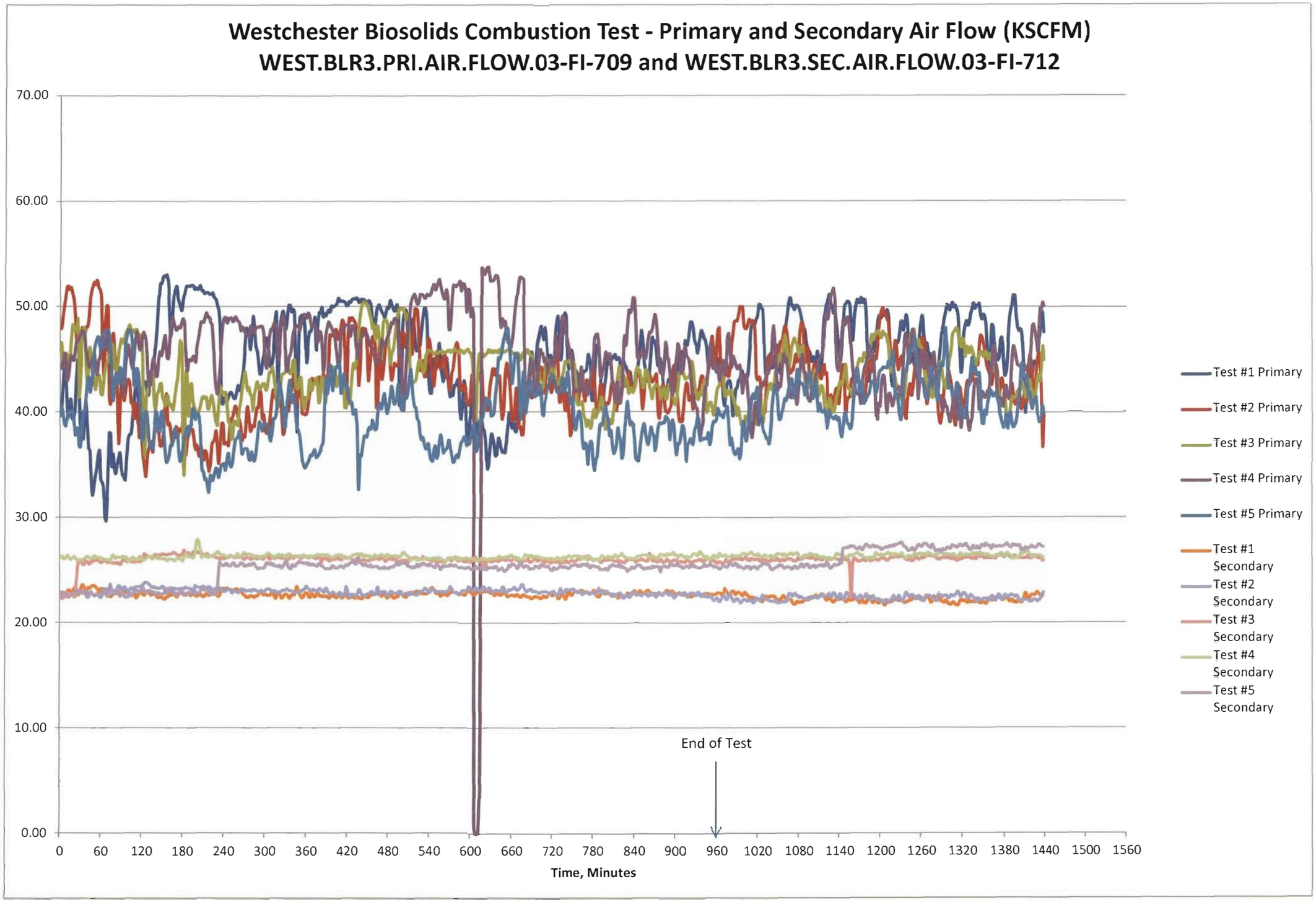
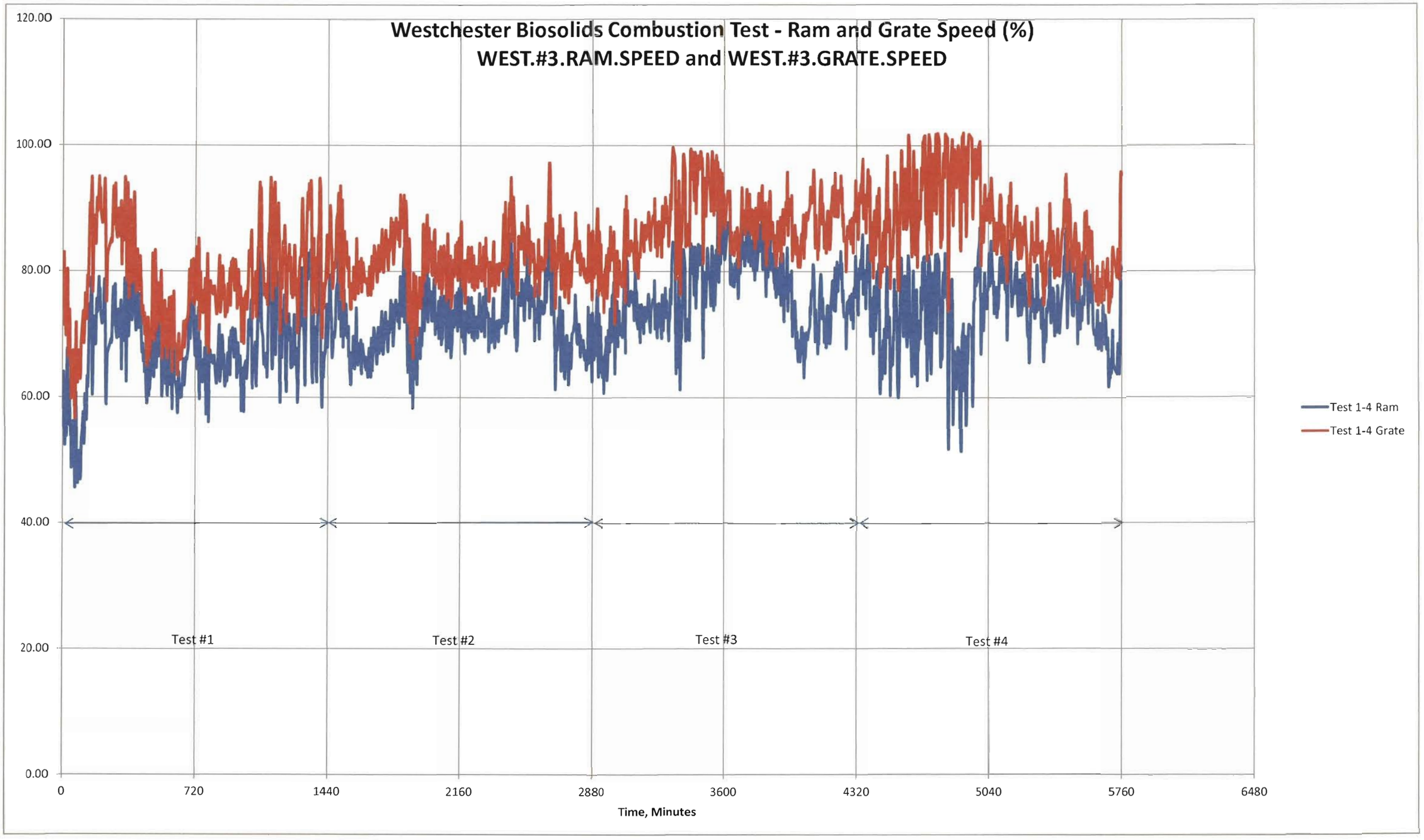
5040
5760
6480
Time, Minutes
Test 1-4 Pressure
Test 1-4 Temperature


Westchester Biosolids Combustion Test - Primary and Secondary Air Flow (KSCFM) and ID Fan Amperage
WEST.BLR3.PRI.AIR.FLOW.03-FI-709 ,WEST.BLR3.SEC.AIR.FLOW.03-FI-712, and WEST.BLR3.ID.FAN.AVERAGE.AMPS.05-II-3416-04
120.00
100.00
80.00
60.00
40.00
20.00
0.00
-20.00
0
720
1440
2160
2880
3600
4320
5040
5760
6480
Test #1
Test #2
Test #3
Test #4
Time, Minutes
Test 1-4 Primary
Test 1-4 Secondary
Test 1-4 ID Fan Amps


Westchester Biosolids Combustion Test - Primary and Secondary Air Flow (KSCFM)
WEST.BLR3.PRI.AIR.FLOW.03-FI-709 and WEST.BLR3.SEC.AIR.FLOW.03-FI-712
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
0
60
120
180
240
300
360
420
480
540
600
660
720
780
840
900
960
1020
1080
1140
1200
1260
1320
1380
1440
1500
1560
Time, Minutes
End of Test
Test #1 Primary
Test #2 Primary
Test #3 Primary
Test #4 Primary
Test #5 Primary
Test #1 Secondary
Test #2 Secondary
Test #3 Secondary
Test #4 Secondary
Test #5 Secondary


Westchester Biosolids Combustion Test - Ram and Grate Speed (%)
WEST.#3.RAM.SPEED and WEST.#3.GRATE.SPEED
120.00
100.00
80.00
60.00
40.00
20.00
0.00
0
720
1440
2160
2880
3600
4320
5040
5760
6480
Time, Minutes
Test #1
Test #2
Test #3
Test #4
Test 1-4 Ram
Test 1-4 Grate

APPENDIX B

BIOSOLIDS – COLLIER COUNTY

Pace Analytical Services, Inc.
6 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: North Sludge Cake 5/17/1
Pace Project No.: 3511984

Sample: AD84242 Sludge Cake Lab: 3511984001 Collected: 05/17/10 08:55 Received: 05/21/10 11:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analy	l Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	2.3	mg/kg	3.4	1.7	1	05/27/10 14:20	06/02/10 01:48	7440-38-2	
Cadmium	0.5	mg/kg	0.34	0.17	1	05/27/10 14:20	06/02/10 01:48	7440-43-9	
Chromium	8	mg/kg	1.7	0.84	1	05/27/10 14:20	06/02/10 01:48	7440-47-3	
Copper	18	mg/kg	1.7	0.84	1	05/27/10 14:20	06/02/10 01:48	7440-50-8	
Lead	9.	mg/kg	3.4	1.7	1	05/27/10 14:20	06/02/10 01:48	7439-92-1	
Molybdenum	7.	mg/kg	3.4	1.7	1	05/27/10 14:20	06/02/10 01:48	7439-98-7	
Nickel	7.	mg/kg	1.7	0.84	1	05/27/10 14:20	06/02/10 01:48	7440-02-0	
Potassium	0.6	% (w/w)	0.034	0.017	1	05/27/10 14:20	06/02/10 01:48	7440-09-7	
Selenium	4.5	mg/kg	5.1	2.5	1	05/27/10 14:20	06/02/10 01:48	7782-49-2	
Zinc	73	mg/kg	6.7	3.4	1	05/27/10 14:20	06/02/10 01:48	7440-66-6	
7471 Mercury	Analyt	l Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	0.4	mg/kg	0.22	0.054	1	05/26/10 11:30	05/27/10 15:15	7439-97-6	
2540G Total Percent Solids	Analyt	l Method: SM 2540G							
Total Solids	18.	%	0.10	0.10	1		05/25/10 15:50		
9045 pH Soil	Analyt	l Method: EPA 9045							
pH at 25 Degrees C	6.	Std. Units	0.10	0.10	1		05/25/10 12:50		
9095 Paint Filter Liquid Test	Analyt	Method: EPA 9095							
Free Liquids	negativ	mL/5min			1		06/03/10 12:15		
Percent Moisture	Analyti	Method: ASTM D2974-87							
Percent Moisture	84.	%	0.10	0.10	1		05/25/10 15:50		
Total Nitrogen Calculation	Analyti	Method: TKN+NOx Calculation							
Total Nitrogen Soil	7.5	% (w/w)	0.0032	0.0016	1		06/01/10 12:19		
351.2 Total Kjeldahl Nitrogen	Analyti	Method: EPA 351.2 Preparation Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	7.5	% (w/w)	0.32	0.16	5	05/26/10 10:15	05/27/10 14:07	7727-37-9	
353.2 Nitrogen, NO2/NO3	Analyti	Method: EPA 353.2							
Nitrogen, NO2 plus NO3	0.00079L	% (w/w)	0.0016	0.00079	5		05/26/10 11:56		
365.4 Phosphorus, Total	Analyti	Method: EPA 365.4 Preparation Method: EPA 365.4							
Phosphorus, Total (as P)	3.2	% (w/w)	0.063	0.032	5	05/26/10 10:15	05/27/10 14:07	7723-14-0	

Date: 06/03/2010 08:35 PM

REPORT OF LABORATORY ANALYSIS

BIOSOLIDS – COLLIER COUNTY 2

ELAB, Inc. 8 East Tower Cr., Ormond Beach, FL 32174-87 **Date:** *12-Feb-08*

Analytical Report

CLIENT: Collier County Water Reclamation Lab
Lab Order: F08011077
Project: SCWRF/Sludge 1/23/08
Lab ID: F08011077-001

Client Sample ID: AD12653
Collection Date: 1/23/2008 9:05:00 AM
Sample Description: S.Sludge Cake
Matrix: Sludge

Analyses	Result	Qual	MDL	PQL	Units	DF	Date Analyzed	Batch ID
ICP METALS		**SW6010**	PrepDate:	**1/31/2008 2:42:00 P**			Analyst: **TPI**	
Arsenic	4.8		1.7	3.3	mg/Kg-dry	1	02/02/08 09:34	50289
Cadmium	1.2		0.17	0.33	mg/Kg-dry	1	02/02/08 09:34	50289
Chromium	17		0.84	1.7	mg/Kg-dry	1	02/02/08 09:34	50289
Copper	260		0.84	1.7	mg/Kg-dry	1	02/02/08 09:34	50289
Lead	13		1.7	3.3	mg/Kg-dry	1	02/02/08 09:34	50289
Molybdenum	5.7	V	0.17	3.3	mg/Kg-dry	1	02/02/08 09:34	50289
Nickel	11		0.84	1.7	mg/Kg-dry	1	02/02/08 09:34	50289
Potassium	0.71		0.0084	0.017	% Dry	1	02/02/08 09:34	50289
Selenium	7.4		2.5	5.0	mg/Kg-dry	1	02/02/08 09:34	50289
Zinc	660		3.3	6.7	mg/Kg-dry	1	02/02/08 09:34	50289
MERCURY		**SW7471**	PrepDate:	**1/31/2008 1:24:00 P**			Analyst: **TPI**	
Mercury	0.61		0.027	0.054	mg/Kg-dry	1	02/01/08 16:38	50290
9071: OIL AND GREASE		**SW9071B**	PrepDate:	**2/4/2008 8:30:00 AM**			Analyst: **JCA**	
Oil & Grease	2800	I	1600	3200	mg/Kg-dry	1	02/04/08 08:40	50338
CYANIDE, TOTAL		**SW9012**	PrepDate:	**1/28/2008 10:00:00**			Analyst: **TKE**	
Cyanide	2.9		0.48	1.5	mg/kg-dry	1	01/28/08 17:05	50161
NITROGEN, NITRATE-NITRITE		**E353.2**	PrepDate:	**1/30/2008 10:00:00**			Analyst: **TKE**	
Nitrogen, Nitrate-Nitrite	0.026		0.0019	0.017	% Dry	5	01/30/08 16:59	50240
NITROGEN, TOTAL		**351.2+353.2**	PrepDate:				Analyst: **TKE**	
Nitrogen, Total	7.1		0.00025	0.00050	% Dry	1	02/04/08 14:22	R64972
NITROGEN, TOTAL KJELDAHL		**E351.2**	PrepDate:	**1/30/2008 11:30:27**			Analyst: **TKE**	
Nitrogen, Kjeldahl, Total	7.1		0.33	0.65	% Dry	10	01/31/08 16:52	50248
PH IN SOIL		**SW9045**	PrepDate:				Analyst: **TM**	
pH	6.86	Q	0.100	0.100	pH Units	1	01/30/08 16:40	R64853
PHOSPHORUS, TOTAL		**E365.4**	PrepDate:	**1/30/2008 11:30:27**			Analyst: **TKE**	
Phosphorus, Total (as P)	3.8		0.065	0.13	% Dry	10	01/31/08 16:52	50248
SOLIDS, PERCENT		**SM2540G**	PrepDate:				Analyst: **MDE**	
Percent Solid	15.0		0.100	0.100	%	1	01/30/08	R64834

Data Qualifier Code Key:
I Analyte detected below quantitation limits
Q Holding times for preparation or analysis exceeded
V Analyte detected in the associated Method Blank

BIOSOLIDS – FT. LAUDERDALE

Industrial Waste Service Agreement
Exhibit A

Date: February 21, 2013

WM Profile #	MR2418-RECERT

CUSTOMER BILLING INFORMATION:	DISPOSAL LANDFILL INFORMATION:	GENERATOR INFORMATION:
H&H LIQUID SLUDGE DISPOSAL INC PO BOX 390 BRANFORD, FLORIDA 32008 Contact Name: RICK HACHT Contact Phone: 800.653.0386 Contact Fax: N/A Contact Email: hhlsd@windstream.net	Monarch Hill Landfill 2700 NW 48th Street Pompano Beach, FL 33073 954.977.9551	CITY OF FORT LAUDERDALE 1765 SE 18TH STREET FORT LAUDERDALE, FLORIDA 33317 County: BROWARD Contact Name: JOE BAYLER Contact Phone: 954.523.1002 Contact Fax: 954.468.1577 Contact Email: jbayley@fortlauderdale.gov

WM Technical Service Phone Number: 800-963-4776	WM Contact: George Cubas, Sales Rep / 305.793.2558 – Cell (549 – Rep Code) TSR: Stephanie Green / 205.652.8167 – Office

Waste Name: MUNICIPAL WASTE SLUDGE — Base X Event ___

Approximate Tonnage: RECERT

Profile Received By WM: 03/24/2011 — Profile Approval Date: 03/24/2011

Profile Expiration Date: 03/31/2014 — Profile Weight Limits: N/A — If Applicable

Existing Customer: X Yes ___ No — If yes, MAS Acct # 0012494 — Market Area# 114

Intercompany: ___ Yes X No — Type of Acct: ___ Cash ___ Check ___ Credit Card X Credit Acct

PO # Required ___ Yes X No — If required: PO #: N/A

Disposal Price:	$29.50/Ton – Bulk Solid For Direct Landfill
Disposal Fuel Surcharge:	NOT APPLICABLE
Environmental Fee:	NOT APPLICABLE
Additional Fees/Surcharges:	$1.00 / Each – Manifest (Blank or Pre – Printed) See Attachment I for other possible Additional Fees/Surcharges. (If Applicable)
Transportation Price:	NOT APPLICABLE
WM Profile Approval Fee:	NOT APPLICABLE
WM Profile Renewal Fee:	$25.00 – RENEWAL FEE

THE WORK CONTEMPLATED BY THIS EXHIBIT A IS TO BE DONE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE INDUSTRIAL WASTE & DISPOSAL SERVICES AGREEMENT BETWEEN THE PARTIES DATED: MAY 26, 2006.

To confirm receipt and accept pricing, please sign & date below.

CUSTOMER'S SIGNATURE: _____ DATE: _____

PREPARED BY: Stephanie Green — DATE: February 21, 2013

Stephanie Green / TSR

Re-Certification of Generator's Non-Hazardous Waste Profile Sheet

LANDFILL:

Profile #: MR2418 New Expiration Date: _____

A. GENERATOR INFORMATON

1. Generator Name: City of Ft. Lauderdale
2. Address: 1765 SE 18th Street, Fort Lauderdale, FL 33317
3. Technical Contact: Joe Bayler Title: _____
4. Telephone: (954) 523-1002 Fax #: (954) 468-1577
5. Email: JBayler@fortlauderdale.gov

B. BILLING INFORMATION - Optional (Mail WM Invoices To:) ☐ Same as above

1. Company Name: H&H Liquid Sludge Disposal
2. Address: PO Box 390, Branford, FL 32008
3. Contact: Rick Hacht Title: _____
4. Telephone: (800) 653-0386 P.O. Box: 390
5. Special Billing Requirements: _____
6. Email: hhlsd@windstream.net

C. RECERTIFICATION INFORMATION

1. Waste Name: Municipal Waste Sludge
2. Have you obtained any laboratory analysis of this waste within the past year? ☐ Yes ☑ No
3. Have you changed the raw materials used in the waste generating process or the waste generating process itself? ☐ Yes ☑ No
4. Is the laboratory analysis and/or other pertinent information previously submitted still representative of the waste as presently generated? ☑ Yes ☐ No

NOTE: IF YOU ANSWERED YES TO QUESTION 2 OR 3 LISTED ABOVE, PLEASE ATTACH APPROPRIATE DOCUMENTATION.

D. RECERTIFICATION STATEMENT.

By signing this form, the generator hereby certifies: The information provided in this document, the attached Waste Management Generator's Waste Profile Sheet, and all other attached documents contain true and accurate descriptions of this waste material. All new information regarding known or suspected hazards in the possession of the generator has been disclosed. The Generator hereby certifies this waste is not a "Hazardous Waste" as defined by the USEPA or Canadian Federal regulation and/or the state/province and this waste does not contain regulated radioactive materials or regulated concentrations of PCB's.

Name: (Print) Joseph Bayler Title: Regional Chief WWTP OP

Signature: Joseph W Bayler Date: 2/21/13

This is an extension of the original WM Decision. All conditions continue to apply.

Acceptable for use in the following states as sanctioned by Waste Management's waste review and approval process. Some waste streams will require the use of a new profile rather than the re-certification form.

AL, AR, CO, DE, FL, GA, IL, IN, KY, LA, MA, MD, ME, MI, MS, NC, NH, NY, OK, SC, TX, & VA.

FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation ☐ Non-hazardous solidification ☐ Other: _____ ☐ Transfer ☐ See attached conditions

Approval Decision: ☐ Approved ☐ Not Approved

Waste Approval Expiration Date: _____

Management Facility Precautions, Special Handling Procedures or Limitation on approval: _____

☐ Shall not contain free liquid
☐ Shipment must be scheduled into disposal facility
☐ Approval number must accompany each shipment
☐ Waste Manifest must accompany load

WM Authorization Name / Title: _____ **Date:** _____

State Authorization (If Required): _____ **Date:** _____

NON-HAZARDOUS WAM APPROVAL FORM

Requested Management Facility Monarch Hill Landfill

Profile Number MR2418 Waste Approval Expiration Date 02/28/2015

APPROVAL DETAILS

Approval Decision ☑ Approved ☐ Not Approved Profile Renewal ☑ Yes ☐ No

Management Method: Direct Landfill

Generator Name: CITY OF FORT LAUDERDALE

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

- Shall not contain free liquid
- Waste Manifest or applicable shipping document must accompany load

Additional Conditions:

WM Authorization Name: John Fanning Title: Waste Approval Manager

WM Authorization Signature: Date: 02/21/2013

Agency Authorization (if Required): Date:

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www.pacelabs.com

Pace Analytical Services, Inc.
3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

November 20, 2012

James Crawford
City of Fort Lauderdale
100 N Andrews Ave 6th Floor
Fort Lauderdale, FL 33301

RE: Project: Quarterly Cake
Pace Project No.: 3574156

Dear James Crawford:
Enclosed are the analytical results for sample(s) received by the laboratory on November 13, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rossy Guima

rossy.guima@pacelabs.com
Project Manager

Enclosures

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Pompano Beach, FL 33064
954-582-4300

CERTIFICATIONS

Project: Quarterly Cake
Pace Project No.: 3574156

Ormond Beach Certification IDs
8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Arizona Certification #: AZ0735
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Pace Analytical Services - Ormond certification number E83509
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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SAMPLE SUMMARY

Project: Quarterly Cake
Pace Project No.: 3574156

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3574156001	**GTL121113**	Solid	11/13/12 08:00	11/13/12 15:22

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Pompano Beach, FL 33064
954-582-4300

SAMPLE ANALYTE COUNT

Project: Quarterly Cake
Pace Project No.: 3574156

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3574156001	**GTL121113**	EPA 6010	JTJ	10	PASI-O
		EPA 7471	HEA	1	PASI-O
		ASTM D2974-87	WMW	1	PASI-O
		EPA 9045	KHC	1	PASI-O
		EPA 9095	GMD	1	PASI-O
		EPA 351.2	MSM	1	PASI-O
		EPA 365.4	MSM	1	PASI-O

Pace Analytical Services, Inc.
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Pompano Beach, FL 33064
954-582-4300

ANALYTICAL RESULTS

Project: Quarterly Cake
Pace Project No.: 3574156

Sample: GTL121113 **Lab ID: 3574156001** Collected: 11/13/12 08:00 Received: 11/13/12 15:22 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	**5.0**	mg/kg	2.8	1.4	1	11/14/12 13:12	11/15/12 13:29	7440-38-2	
Cadmium	**0.70**	mg/kg	0.28	0.14	1	11/14/12 13:12	11/15/12 13:29	7440-43-9	
Chromium	**12.1**	mg/kg	1.4	0.69	1	11/14/12 13:12	11/15/12 13:29	7440-47-3	
Copper	**255**	mg/kg	1.4	0.69	1	11/14/12 13:12	11/15/12 13:29	7440-50-8	
Lead	**18.4**	mg/kg	2.8	1.4	1	11/14/12 13:12	11/15/12 13:29	7439-92-1	
Molybdenum	**4.3**	mg/kg	2.8	1.4	1	11/14/12 13:12	11/15/12 13:29	7439-98-7	
Nickel	**8.5**	mg/kg	1.4	0.69	1	11/14/12 13:12	11/15/12 13:29	7440-02-0	
Potassium	**6680**	mg/kg	276	138	1	11/14/12 13:12	11/15/12 13:29	7440-09-7	
Selenium	**2.1U**	mg/kg	4.1	2.1	1	11/14/12 13:12	11/15/12 13:29	7782-49-2	
Zinc	**523**	mg/kg	5.5	2.8	1	11/14/12 13:12	11/15/12 13:29	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	**0.31**	mg/kg	0.089	0.045	1	11/16/12 03:15	11/16/12 13:22	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**81.7**	%	0.10	0.10	1		11/14/12 02:25		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**6.6**	Std. Units	0.10	0.10	1		11/20/12 13:50		
9095 Paint Filter Liquid Test	Analytical Method: EPA 9095								
Free Liquids	**NEG**	mL/5min			1		11/15/12 01:00		
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**72400**	mg/kg	537	268	1	11/15/12 09:40	11/16/12 11:48	7727-37-9	
365.4 Phosphorus, Total	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4								
Phosphorus, Total (as P)	**16600**	mg/kg	537	268	5	11/15/12 09:40	11/16/12 14:29	7723-14-0	J(M1)

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QUALITY CONTROL DATA

Project: Quarterly Cake
Pace Project No.: 3574156

QC Batch: MERP/3313
QC Batch Method: EPA 7471
Analysis Method: EPA 7471
Analysis Description: 7471 Mercury
Associated Lab Samples: 3574156001

METHOD BLANK: 509263 Matrix: Solid
Associated Lab Samples: 3574156001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	0.0039U	0.0078	11/16/12 13:00	

LABORATORY CONTROL SAMPLE: 509264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.08	0.084	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 509265 509266

Parameter	Units	3574154001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.77	.13	.13	0.85	1.0	64	203	85-115	19	20	J(M1)

Pace Analytical Services, Inc.
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Pompano Beach, FL 33064
954-582-4300

QUALITY CONTROL DATA

Project: Quarterly Cake
Pace Project No.: 3574156

QC Batch: MPRP/11213
QC Batch Method: EPA 3050
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 3574156001

METHOD BLANK: 507508 Matrix: Solid
Associated Lab Samples: 3574156001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	0.25U	0.50	11/15/12 12:47	
Cadmium	mg/kg	0.025U	0.050	11/15/12 12:47	
Chromium	mg/kg	0.12U	0.25	11/15/12 12:47	
Copper	mg/kg	0.12U	0.25	11/15/12 12:47	
Lead	mg/kg	0.25U	0.50	11/15/12 12:47	
Molybdenum	mg/kg	0.25U	0.50	11/15/12 12:47	
Nickel	mg/kg	0.12U	0.25	11/15/12 12:47	
Potassium	mg/kg	24.9U	49.8	11/15/12 12:47	
Selenium	mg/kg	0.37U	0.75	11/15/12 12:47	
Zinc	mg/kg	0.50U	1.0	11/15/12 12:47	

LABORATORY CONTROL SAMPLE: 507509

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	12.5	13.0	103	80-120	
Cadmium	mg/kg	1.3	1.3	106	80-120	
Chromium	mg/kg	12.5	12.9	103	80-120	
Copper	mg/kg	12.5	13.2	105	80-120	
Lead	mg/kg	12.5	13.5	108	80-120	
Molybdenum	mg/kg	12.5	13.2	106	80-120	
Nickel	mg/kg	12.5	13.4	107	80-120	
Potassium	mg/kg	627	686	109	80-120	
Selenium	mg/kg	12.5	13.4	107	80-120	
Zinc	mg/kg	62.7	67.1	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 507510 507511

Parameter	Units	3574153004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	1.4U	13.9	14.1	5.6	4.9	38	33	75-125	12	20	
Cadmium	mg/kg	0.14U	1.4	1.4	1.3	1.3	92	91	75-125	.2	20	
Chromium	mg/kg	19.5	13.9	14.1	34.9	38.3	110	134	75-125	9	20	
Copper	mg/kg	0.71U	13.9	14.1	13.0	13.0	93	93	75-125	.4	20	
Lead	mg/kg	5.8	13.9	14.1	17.5	19.3	84	96	75-125	10	20	
Molybdenum	mg/kg	1.4U	13.9	14.1	7.9	9.2	57	65	75-125	14	20	
Nickel	mg/kg	2.4	13.9	14.1	16.1	16.9	99	103	75-125	5	20	
Potassium	mg/kg	142U	696	703	792	772	101	97	75-125	3	20	
Selenium	mg/kg	2.1U	13.9	14.1	5.7	3.6 I	41	26	75-125		20	
Zinc	mg/kg	2.8U	69.6	70.3	67.2	67.3	96	95	75-125	.05	20	

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954-582-4300

QUALITY CONTROL DATA

Project: Quarterly Cake
Pace Project No.: 3574156

QC Batch: PMST/1453
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 3574156001

SAMPLE DUPLICATE: 507149

Parameter	Units	3573423005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	99.1	99.0	.1	10	

SAMPLE DUPLICATE: 507150

Parameter	Units	3573799002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	99.1	98.8	.3	10	

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QUALITY CONTROL DATA

Project: Quarterly Cake
Pace Project No.: 3574156

QC Batch: WET/16288
QC Batch Method: EPA 9045
Analysis Method: EPA 9045
Analysis Description: 9045 pH
Associated Lab Samples: 3574156001

SAMPLE DUPLICATE: 511964

Parameter	Units	3571086001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.9	5.9	0	20	

SAMPLE DUPLICATE: 512093

Parameter	Units	3574745001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.0	6.0	0	20	

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QUALITY CONTROL DATA

Project: Quarterly Cake
Pace Project No.: 3574156

QC Batch: WET/16201
QC Batch Method: EPA 9095
Analysis Method: EPA 9095
Analysis Description: 9095 PAINT FILTER LIQUID TEST
Associated Lab Samples: 3574156001

SAMPLE DUPLICATE: 508675

Parameter	Units	3574156001 Result	Dup Result	RPD	Max RPD	Qualifiers
Free Liquids	mL/5min	NEG	NEG			

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QUALITY CONTROL DATA

Project: Quarterly Cake
Pace Project No.: 3574156

QC Batch: WETA/21710 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 3574156001

METHOD BLANK: 508568 Matrix: Solid
Associated Lab Samples: 3574156001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	10.0U	20.0	11/16/12 11:45	

LABORATORY CONTROL SAMPLE: 508569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	800	793	99	90-110	

MATRIX SPIKE SAMPLE: 508571

Parameter	Units	3574156001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	72400	21200	92400	94	90-110	

SAMPLE DUPLICATE: 508570

Parameter	Units	3574156001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	72400	75300	4	20	

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QUALITY CONTROL DATA

Project: Quarterly Cake
Pace Project No.: 3574156

QC Batch: WETA/21711 — Analysis Method: EPA 365.4
QC Batch Method: EPA 365.4 — Analysis Description: 365.4 Total Phosphorus
Associated Lab Samples: 3574156001

METHOD BLANK: 508582 — Matrix: Solid
Associated Lab Samples: 3574156001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus, Total (as P)	mg/kg	2.0U	4.0	11/16/12 11:56	

LABORATORY CONTROL SAMPLE: 508583

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus, Total (as P)	mg/kg	160	158	99	90-110	

MATRIX SPIKE SAMPLE: 508585

Parameter	Units	3574156001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Phosphorus, Total (as P)	mg/kg	16600	4230	19800	75	80-120	J(M1)

SAMPLE DUPLICATE: 508584

Parameter	Units	3574156001 Result	Dup Result	RPD	Max RPD	Qualifiers
Phosphorus, Total (as P)	mg/kg	16600	16800	1	20	

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QUALIFIERS

Project: Quarterly Cake
Pace Project No.: 3574156

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J(M1)	Estimated Value. Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Quarterly Cake
Pace Project No.: 3574156

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3574156001	GTL121113	EPA 3050	MPRP/11213	EPA 6010	ICP/7267
3574156001	GTL121113	EPA 7471	MERP/3313	EPA 7471	MERC/3313
3574156001	GTL121113	ASTM D2974-87	PMST/1453		
3574156001	GTL121113	EPA 9045	WET/16288		
3574156001	GTL121113	EPA 9095	WET/16201		
3574156001	GTL121113	EPA 351.2	WETA/21710	EPA 351.2	WETA/21737
3574156001	GTL121113	EPA 365.4	WETA/21711	EPA 365.4	WETA/21738

BIOSOLIDS – KEY WEST

WASTE MANAGEMENT

Industrial Waste Service Agreement
Exhibit A

Date: January 24, 2011

WM Profile #	GC4092

CUSTOMER BILLING INFORMATION:	DISPOSAL LANDFILL INFORMATION:	GENERATOR INFORMATION:
CH2MHILLOMI Inc. Post Office Box 4998 Key West, Florida 33040 Contact Name: Nicolas LeCoumpte Contact Phone: 305.292.5100 Contact Fax: 305.292.5130 Contact Email: Nicolas.lecoumpte@ch2m.com	Central Disposal Landfill 2700 NW 48th Street Pompano Beach, FL 33073 954.977.9551	Richard A Heyman Environmental Pollution Control Facility Key West WWTP, Trumbo Point Annex Key West, Florida 33040 County: Monroe Contact Name: Nicolas LeCoumpte Contact Phone: 305.292.5100 Contact Fax: 305.292.5130 Contact Email: Nicolas.lecoumpte@ch2m.com USEPA ID# State Gen ID #:
WM Technical Service Phone Number: 800-963-4776	WM Contact: George Cubas, Sales Rep / 305.793.2558 – Cell (549 – Rep Code) TSR: Leigh Coghlan / 205.652.8135 – Office	

Waste Name:	Domestic Sewage Sludge			Base X	Event
Approximate Tonnage:	Base - Recert				
Profile Received By WM:	01/12/2011	Profile Approval Date:	01/12/2011		
Profile Expiration Date:	01/31/2014	Profile Weight Limits:	N/A	If Applicable	

Existing Customer:	X Yes	No	If yes, MAS Acct #	0012160		Market Area#	114		
Intercompany:	Yes	X No	Type of Acct:	Cash	Check	Credit Card	X Credit Acct		
PO # Required	X Yes	No	If required:	PO #:	N/A KEYWE1010001 through 9-30-2011				

Disposal Price:	$25.34 / Ton – Bulk Solid For Direct Landfill
Disposal Fuel Surcharge:	Not Applicable
Environmental Fee:	Not Applicable
Additional Fees/Surcharges:	$1.00 / Each – Manifest (Blank or Pre – Printed) See Attachment I for other possible Additional Fees/Surcharges. (If Applicable)
Transportation Price:	$29.74 / Ton 22 Ton Per Load Minimum
WM Profile Approval Fee:	Not Applicable
WM Profile Renewal Fee:	$25.00/Profile – Renewal

THE WORK CONTEMPLATED BY THIS EXHIBIT A IS TO BE DONE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE INDUSTRIAL WASTE & DISPOSAL SERVICES AGREEMENT BETWEEN THE PARTIES DATED:

To confirm receipt and accept pricing, please sign & date below.

CUSTOMER'S SIGNATURE: Trisha Osterrill DATE: 1-25-2011

PREPARED BY: L Leigh Coghlan DATE: January 24, 2011

L. Leigh Coghlan / TSR / T. Smith

ATTACHMENT I

CENTRAL DISPOSAL FACILITY FEES/SURCHARGES: (If Applicable)

WM APPROVAL FEES:

Waste Approval Fee:	**$ 50.00/Profile**
Profile Recertification Fee:	**$ 25.00/Profile**

Manifest Fee - $1.00/Each.

Spill Cleanup - $500.00/load

Unscheduled/Late Load - $250.00/load.

Certification of Burial/Destruction – $50.00.

Special Handling / Burial - $175.00.

Dig-Out - $150.00.

Pull-Off - $200.00.

Overweight Loads - $100.00.

Additional Documentation – Extra copies, Tickets ccs – $50.00 Minimum.

Record Management (Extra Copies) - $50.00 Minimum.

Waste Ban Items (White Goods, Tires, Etc.) - $50.00 Each Item, Remove and Reload.

Witness Destruction - $50.00.

Tipper Use - $100.00.

Credit Approval Fee - $25.00

Waste Management reserves the right to refuse any load or discontinue any waste stream should such waste pose a threat to human health or safety, prove to be operationally challenging, or is in violation of any WM permit.

Generator's Non-hazardous Waste Profile Sheet

Requested Disposal Facility: Central Disposal Profile Number: GC4092

☑ Renewal for Profile Number: GC4092 Waste Approval Expiration Date: _____

☐ Check here if there are multiple generating locations for this waste. Attach additional locations.

A. Waste Generator Facility Information (must reflect location of waste generation/origin)

1. Generator Name: Richard A. Heyman Enviromental Pollution Control Facility
2. Site Address: Key West WWTP, Trumbo Point Annex,
3. City/ZIP: Key West, 33040
4. State: Florida
5. County: Monroe
6. Contact Name/Title: Nicolas LeCoumpte
7. Email Address: nicolas.lecoumpte@ch2m.com
8. Phone: 305-292-5100 9. FAX: 305-292-5130
10. NAICS Code: _____
11. Generator USEPA ID #: _____
12. State ID# (if applicable): _____

B. Customer Information ☐ same as above

P. O. Number: _____

1. Customer Name: CH2MHILLOMI inc.
2. Billing Address: POBOX 4998
3. City, State and ZIP: Key West, Florida, 33040
4. Contact Name: Nicolas LeCoumpte
5. Contact Email: nicolas.lecoumpte@ch2m.com
6. Phone: 305-292-5100 FAX: 305-292-5130
7. Transporter Name: _____
8. Transporter ID # (if appl.): _____
9. Transporter Address: _____
10. City, State and ZIP: _____

C. Waste Stream Information

1. DESCRIPTION

a. Common Waste Name: DOMESTIC SEWAGE SLUDGE (SOLIDS)

State Waste Code(s): _____

b. Describe Process Generating Waste or Source of Contamination:

Treatement of Wastewater at a Munincipal POTW

c. Typical Color(s): BrownBlack

d. Strong Odor? ☐ Yes ☑ No Describe: _____

e. Physical State at 70°F: ☐ Solid ☐ Liquid ☐ Powder ☑ Semi-Solid or Sludge ☐ Other: _____

f. Layers? ☐ Single layer ☐ Multi- layer ☑ NA

g. Water Reactive? ☐ Yes ☑ No If Yes, Describe: _____

h. Free Liquid Range (%): _____ to _____ ☐ NA(solid)

i. pH Range: _____ to _____ ☑ NA(solid)

j. Liquid Flash Point: ☐ < 140°F ☐ 140°- 199°F ☐ ≥ 200°F ☑ NA(solid)

k. Flammable Solid: ☐ Yes ☑ No

l. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%): ☐ (See Attached)

Constituents (Total Composition Must be ≥ 100%)	Lower Range	Unit of Measure	Upper Range	Unit of Measure
1. Municipal POTW Sludge	100	%	0	%
2.				
3.				
4.				
5.				
6.				

2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION

a. ☐ One Time Event ☐ Base ☑ Repeat Event

b. Estimated Annual Quantity: 7,400 ☑ Tons ☐ Cubic Yards ☐ Drums ☐ Gallons ☐ Other (specify): _____

c. Shipping Frequency: 33 Units per ☑ Month ☐ Quarter ☐ Year ☐ One Time ☐ Other

d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ☐ Yes ☑ No

e. USDOT Shipping Description (if applicable): _____

3. SAFETY REQUIREMENTS (Handling, PPE, etc.): Normal landfill site PPE

Generator's Non-hazardous Waste Profile Sheet

GC4092

D. Regulatory Status (Please check appropriate responses)

1. Waste Identification:
   a. Does the waste meet the definition of a USEPA listed or characteristic hazardous waste as defined by 40 CFR Part 261? ☐ Yes ☑ No
      1. If yes, please complete a hazardous waste profile.
   b. Does the waste meet the definition of a state hazardous waste other than identified in D.1.a? ☐ Yes ☑ No
      1. If yes, please complete a hazardous waste profile.
2. Is this waste included in one or more of categories below (Check all that apply)? If yes, attach supporting documentation. ☐ Yes ☑ No
   ☐ Delisted Hazardous Waste ☐ Excluded Wastes Under 40CFR 261.4
   ☐ Treated Hazardous Waste Debris ☐ Treated Characteristic Hazardous Waste
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? If yes, see instructions. ☐ Yes ☑ No
4. Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☑ No
   a. If yes, is disposal regulated by the Nuclear Regulatory Commission? ☐ Yes ☐ No
   b. If yes, is disposal regulated by a State Agency for radioactive waste/NORM? ☐ Yes ☐ No
5. Does the waste represented by this waste profile sheet contain Polychlorinated Biphenyls (PCBs)? ☐ Yes ☑ No
   (If yes, list in Chemical Composition - C.1.l)
   a. If yes, are the PCBs regulated by 40 CFR 761? ☐ Yes ☐ No
   b. If yes, is it remediation waste from a project being performed under the Self-Implementing option provided in 40 CFR 761.61(a)? ☐ Yes ☐ No
   c. If yes, were the PCBs imported into the US? ☐ Yes ☐ No
6. Does the waste contain untreated, regulated medical or infectious waste? ☐ Yes ☑ No
7. Does the waste contain asbestos? ☐ Yes ☑ No
   a. If Yes, ☐ Friable ☐ Non Friable
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)? ☐ Yes ☑ No
   a. If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☐ No

E. Generator Certification (Please read and certify by signature below)

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the contractor if applicable).
5. Check all that apply:
   ☐ a. Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested: _____ # Pages: _____
   ☐ b. Only the analysis identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested). Attachment #: _____
   ☐ c. Additional information necessary to characterize the profiled waste has been attached (other then analytical, such as MSDS). Indicate the number of attached pages: _____
   ☐ d. I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.

Certification Signature: _____ Title: Operations Manager

Company Name: CH2MHILL/OMI inc. Name (Print): Nicolas LeCoumpte

Date: 01/12/11

NON-HAZARDOUS WAM APPROVAL FORM

Requested Disposal Facility Central Disposal

Profile Number GC4092 Waste Approval Expiration Date 01/31/2014

APPROVAL DETAILS

Approval Decision: ☑ Approved ☐ Not Approved Profile Renewal: ☑ Yes ☐ No

Management Method: Direct Landfill

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

- Shall not contain free liquid
- Waste Manifest must accompany load

Additional Conditions:

WM Authorization Name: John Fanning Title: Waste Approval Manager

WM Authorization Signature: Date: 01/12/2011

Agency Authorization (if Required): Date:

FLOWERS
CHEMICAL LABORATORIES INCORPORATED

January 11, 2011 02:05 PM EDT
Welcome, Rick Cleaver!
CH2MHill OMI-Key West
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Analytical Report

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Summary

Client	CH2MHill OMI-Key West P O Box 4998 Key West, FL 33040	Date Sampled	Dec 20, 2010
		Date Received	Dec 22, 2010
		Date Reported	Jan 11, 2011
		FLDOH #	E83018 (Main Lab)
		FLDOH #	E86562 (South Lab)
PO Number		NYSDOH #	11595
Project Number		CTDPH #	173
Invoice Number	140020	NJDEP #	FL015
		UTDOH #	FLOW

Laboratory Number	Sample Description	Analyses	Chemist	Location	Sample Matrix
S 140020HW1	1210-3977	EPA6020	EVB	Main Lab	Waste
		EPA7470	EVB	Main Lab	
		EPA8081	DLJ	Main Lab	
		EPA8151	DLJ	Main Lab	
		EPA8260	CLS	Main Lab	
		EPA8270	CLS	Main Lab	
		X8081	CDG	Main Lab	
		X8151	ACS	Main Lab	
		X8270	CDG	Main Lab	

Certificate of Results

Sample integrity was certified prior to analysis. Test results meet all requirements of the NELAC Standards, except as noted in the Quality Control Report. Uncertainties for these data are available on request. This report may not be reproduced in part, results relate only to items tested.

Domestic Sewage Sludge (Solids)

Analysis Report

Sample Description 1210-3977
Laboratory Number 140020HW1 **Date Sampled** Dec 20, 2010 10:35 AM

Parameter	Result	Units	DF	MDL	QC Batch	Method	Analyzed
TCLP Mercury	0.000200 U	mg/L	1.00	0.000200	10164863	EPA7470	12/23/10
TCLP Arsenic	0.0100 U	mg/L	1.00	0.0100	10164915	EPA6020	12/22/10
TCLP Barium	0.0184 I	mg/L	1.00	0.0100	10164915	EPA6020	12/22/10
TCLP Cadmium	0.0100 U	mg/L	1.00	0.0100	10164915	EPA6020	12/22/10
TCLP Chromium	0.0104 I	mg/L	1.00	0.0100	10164915	EPA6020	12/22/10
TCLP Lead	0.0100 U	mg/L	1.00	0.0100	10164915	EPA6020	12/22/10
TCLP Selenium	0.0254	mg/L	1.00	0.0100	10164915	EPA6020	12/22/10
TCLP Silver	0.0100 U	mg/L	1.00	0.0100	10164915	EPA6020	12/22/10
Chlor_Pest_Extraction	900	mL	1.00			X8081	12/27/10
TCLP 1,1-dichloroethane	5.00 U	ug/L	5.00	5.00	10165215	EPA8260	12/28/10
TCLP 1,2-dichloroethane	5.00 U	ug/L	5.00	5.00	10165215	EPA8260	12/28/10
TCLP Benzene	5.00 U	ug/L	5.00	5.00	10165215	EPA8260	12/28/10
TCLP Carbon tetrachloride	5.00 U	ug/L	5.00	5.00	10165215	EPA8260	12/28/10
TCLP Chlorobenzene	5.00 U	ug/L	5.00	5.00	10165215	EPA8260	12/28/10
TCLP Chloroform	5.00 U	ug/L	5.00	5.00	10165215	EPA8260	12/28/10
TCLP Methyl ethyl ketone	25.0 U	ug/L	5.00	25.0	10165215	EPA8260	12/28/10
TCLP Para-dichlorobenzene	5.00 U	ug/L	5.00	5.00	10165215	EPA8260	12/28/10
TCLP Tetrachloroethene	5.00 U	ug/L	5.00	5.00	10165215	EPA8260	12/28/10
TCLP Trichloroethene	5.00 U	ug/L	5.00	5.00	10165215	EPA8260	12/28/10
TCLP Vinyl chloride	5.00 U	ug/L	5.00	5.00	10165215	EPA8260	12/28/10
Acid Base Extraction	880	mL	1.00			X8270	12/27/10
Chlor_Herb_Extraction	40.0	mL	1.00			X8151	12/30/10
TCLP 2,4,5-Trichlorophenol	2.00 U	ug/L	1.00	2.00	10165548	EPA8270	01/03/11
TCLP 2,4,6-Trichlorophenol	2.00 U	ug/L	1.00	2.00	10165548	EPA8270	01/03/11
TCLP 2,4-Dinitrotoluene	2.00 U	ug/L	1.00	2.00	10165548	EPA8270	01/03/11
TCLP Hexachlorobenzene	2.00 U	ug/L	1.00	2.00	10165548	EPA8270	01/03/11
TCLP Hexachlorobutadiene	2.00 U	ug/L	1.00	2.00	10165548	EPA8270	01/03/11
TCLP Hexachloroethane	2.00 U	ug/L	1.00	2.00	10165548	EPA8270	01/03/11
TCLP Nitrobenzene	2.00 U	ug/L	1.00	2.00	10165548	EPA8270	01/03/11
TCLP Pentachlorophenol	2.00 U	ug/L	1.00	2.00	10165548	EPA8270	01/03/11
TCLP Pyridine	10.0 U	ug/L	1.00	10.0	10165548	EPA8270	01/03/11
TCLP m-Cresol	2.00 U	ug/L	1.00	2.00	10165548	EPA8270	01/03/11
TCLP o-Cresol	2.00 U	ug/L	1.00	2.00	10165548	EPA8270	01/03/11
TCLP p-Cresol	2.00 U	ug/L	1.00	2.00	10165548	EPA8270	01/03/11
TCLP Chlordane	0.0250 U	ug/L	1.00	0.0250	10165969	EPA8081	01/05/11
TCLP Endrin	0.0250 U	ug/L	1.00	0.0250	10165969	EPA8081	01/05/11
TCLP Heptachlor	0.0250 U	ug/L	1.00	0.0250	10165969	EPA8081	01/05/11
TCLP Heptachlor epoxide	0.0250 U	ug/L	1.00	0.0250	10165969	EPA8081	01/05/11
TCLP Lindane	0.0250 U	ug/L	1.00	0.0250	10165969	EPA8081	01/05/11
TCLP Methoxychlor	0.100 U	ug/L	1.00	0.100	10165969	EPA8081	01/05/11
TCLP Toxaphene	0.500 U	ug/L	1.00	0.500	10165969	EPA8081	01/05/11
TCLP 2,4,5-TP (Silvex)	0.250 U	ug/L	1.00	0.250	10165973	EPA8151	01/05/11
TCLP 2,4-D	0.250 U	ug/L	1.00	0.250	10165973	EPA8151	01/05/11

BIOSOLIDS – SUNRISE

Industrial Waste Service Agreement
Exhibit A

Date: MARCH 24, 2011

CUSTOMER BILLING INFORMATION:	DISPOSAL LANDFILL INFORMATION:	WM Profile # 7086GC GENERATOR INFORMATION:
H&H LIQUID SLUDGE DISPOSAL INC PO BOX 390 BRANFORD, FLORIDA 32008 Contact Name: SHEILA MORRISON Contact Phone: 800.653.0386 Contact Fax: N/A Contact Email: hhlsd@windstream.net	Central Disposal Landfill 2700 NW 48th Street Pompano Beach, FL 33073 954.977.9551	CITY OF SUNRISE WWTP 14150 NW 8TH STREET 1777 SAWGRASS SUNRISE, FLORIDA 33325 County: BROWARD Contact Name: GREG SUTTERLAND Contact Phone: 954.888.6000 Contact Fax: 954.849.7404 Contact Email: kthompson@cityofsunrise.org

WM Technical Service Phone Number: 800-963-4776	WM Contact: George Cubas, Sales Rep / 305.793.2558 – Cell (549 – Rep Code) TSR: Leigh Coghlan / 205.662.8135 – Office

Waste Name: BELT PRESS CAKE — Base X Event ___
Approximate Tonnage: 9400 TONS
Profile Received By WM: 03/24/2011 — Profile Approval Date: 03/24/2011
Profile Expiration Date: 03/31/2014 — Profile Weight Limits: N/A — If Applicable

Existing Customer: X Yes ___ No — If yes, MAS Acct # 0012494 — Market Area# 114
Intercompany: ___ Yes X No — Type of Acct: ___ Cash ___ Check ___ Credit Card X Credit Acct
PO # Required ___ Yes X No — If required: PO #: N/A

Disposal Price:	$29.50/Ton – Bulk Solid For Direct Landfill
Disposal Fuel Surcharge:	NOT APPLICABLE
Environmental Fee:	NOT APPLICABLE
Additional Fees/Surcharges:	$1.00 / Each – Manifest (Blank or Pre – Printed) See Attachment I for other possible Additional Fees/Surcharges. (If Applicable)
Transportation Price:	NOT APPLICABLE
WM Profile Approval Fee:	NOT APPLICABLE
WM Profile Renewal Fee:	$25.00 – RENEWAL FEE

THE WORK CONTEMPLATED BY THIS EXHIBIT A IS TO BE DONE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE INDUSTRIAL WASTE & DISPOSAL SERVICES AGREEMENT BETWEEN THE PARTIES DATED: MAY 26, 2006.

To confirm receipt and accept pricing, please sign & date below.

CUSTOMER'S SIGNATURE: _____ DATE: April 1, 2011

PREPARED BY: L Leigh Coghlan DATE: March 24, 2011
L. Leigh Coghlan / TSR / Stephanie Green

Re-Certification of Generator's Non-Hazardous Waste Profile Sheet

LANDFILL: CENTRAL

Profile #: 7085GC New Expiration Date: _____

A. GENERATOR INFORMATON

1. Generator Name: City of Sunrise WWTP
2. Address: 14150 N.W 5th St. / 777 Sawgrass Sunrise FL 33325
3. Technical Contact: Greg Sutherland Title: Chief Operator
4. Telephone: 954-888-6000 Fax #: 954-849-7404
5. Email: —

B. BILLING INFORMATION - Optional (Mail WM Invoices To:) ☐ Same as above

1. Company Name: H&H Liquid Sludge Disposal Inc
2. Address: P.O. Box 390 Branford FL 32008
3. Contact: Sheila Morrison Title: Office Mgr
4. Telephone: (800) 653-0386 P.O. Box: 390
5. Special Billing Requirements: _____
6. Email: hhlsdc@windstream.net

C. RECERTIFICATION INFORMATION

1. Waste Name: BELT PRESS CAKE
2. Have you obtained any laboratory analysis of this waste within the past year? ☐ Yes ☑ No
3. Have you changed the raw materials used in the waste generating process or the waste generating process itself? ☐ Yes ☑ No
4. Is the laboratory analysis and/or other pertinent information previously submitted still representative of the waste as presently generated? ☑ Yes ☐ No

NOTE: IF YOU ANSWERED YES TO QUESTION 2 OR 3 LISTED ABOVE, PLEASE ATTACH APPROPRIATE DOCUMENTATION.

D. RECERTIFICATION STATEMENT.

By signing this form, the generator hereby certifies: The information provided in this document, the attached Waste Management Generator's Waste Profile Sheet, and all other attached documents contain true and accurate descriptions of this waste material. All new information regarding known or suspected hazards in the possession of the generator has been disclosed. The Generator hereby certifies this waste is not a "Hazardous Waste" as defined by the USEPA or Canadian Federal regulation and/or the state/province and this waste does not contain regulated radioactive materials or regulated concentrations of PCB's.

Name: (Print) KARL THOMPSON Title: CHIEF OPERATOR

Signature: Karl Thompson Date: 3-24-11

This is an extension of the original WM Decision. All conditions continue to apply.

Acceptable for use in the following states as sanctioned by Waste Management's waste review and approval process. Some waste streams will require the use of a new profile rather than the re-certification form.

AL, AR, CO, DE, FL, GA, IL, IN, KY, LA, MA, MD, ME, MI, MS, NC, NH, NY, OK, SC, TX, & VA.

FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation ☐ Non-hazardous solidification ☐ Other: _____ ☐ Transfer ☐ See attached conditions

Approval Decision: ☐ Approved ☐ Not Approved

Waste Approval Expiration Date: _____

Management Facility Precautions, Special Handling Procedures or Limitation on approval: _____

☐ Shall not contain free liquid
☐ Shipment must be scheduled into disposal facility
☐ Approval number must accompany each shipment
☐ Waste Manifest must accompany load

WM Authorization Name / Title: _____ Date: _____

Site Authorization (if Required): _____ Date: _____

NON-HAZARDOUS WAM APPROVAL FORM

Requested Disposal Facility: Central Disposal

Profile Number: GC7085 Waste Approval Expiration Date: 03/31/2014

APPROVAL DETAILS

Approval Decision: ☑ Approved ☐ Not Approved Profile Renewal: ☑ Yes ☐ No

Management Method: Direct Landfill

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

- Shall not contain free liquid
- Waste Manifest must accompany load

Additional Conditions:

WM Authorization Name: John Fanning Title: Waste Approval Manager

WM Authorization Signature: Date: 03/24/2011

Agency Authorization (if Required): Date:

Analytical Report 408371

Ethan Jordan

DN: cn=Ethan Jordan, o=City of Sunrise, ou=Lab, email=ejordan@cityofsunrise.org, c=US
Date: 2011.03.15 13:53:05 -04'00'

for

City of Sunrise

Project Manager: Ethan Jordan

COC110302EOH01.xlsx

NB

15-MAR-11

XENCO Laboratories
Florida Testing Services, LLC

Genapure
Analytical Services, inc.

ACCREDITED IN ACCORDANCE WITH nelac

3231 NW 7th Avenue, Boca Raton, FL 33431
Ph:(561) 447-7373 Fax:(561) 447-6136

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

15-MAR-11

Project Manager: **Ethan Jordan**
City of Sunrise
777 Sawgrass Corporate Parkway
Fort Lauderdale, FL 33325

Reference: XENCO Report No: **408371**
COC110302EOH01.xlsx
Project Address:

Ethan Jordan:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 408371. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 408371 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Terrence Anderson
Office Manager

Sample Cross Reference 408371

City of Sunrise, Fort Lauderdale, FL

COC110302EOH01.xlsx

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SPW INF Rag-B11MISC0208	S	Mar-02-11 00:00		408371-001
SPW INF Grit-B11MISC0210	S	Mar-02-11 00:00		408371-003

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 408371

City of Sunrise, Fort Lauderdale, FL

COC110302EOH01.xlsx

Sample Id: SPW INF Rag-B11MISC0208	**Matrix:** Sludge	**% Moisture:** 78.6
Lab Sample Id: 408371-001	**Date Collected:** Mar-02-11 00:00	**Basis:** Dry Weight
	Date Received: Mar-02-11 12:45	

Analytical Method: Reactive Sulfide by SW 9030B
Analyst: ARM
Tech: ARM
Seq Number: 846794

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Sulfide	105-05-2	U	234	31.3	mg/kg	03/08/11 17:15	U	10

Project: *Florida Standard List of Methods*

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 408371

City of Sunrise, Fort Lauderdale, FL

COC110302EOH01.xlsx

Sample Id: SPW INF Rag-B11MISC0208	**Matrix:** Sludge	**% Moisture:**
Lab Sample Id: 408371-001	**Date Collected:** Mar-02-11 00:00	**Basis:** Wet Weight
	Date Received: Mar-02-11 12:45	

Analytical Method: Percent Moisture
Analyst: ARM **Tech:** ARM
Seq Number: 846101

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Solids, percent		21.1			%	03/03/11 09:41		1

Analytical Method: Reactive Cyanide by EPA 9010
Analyst: RGF **Tech:** DAD
Seq Number: 846802

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Cyanide	57-12-5	U	2.00	0.176	mg/kg	03/08/11 18:19	U	10

Analytical Method: Soil pH by EPA 9045C
Analyst: KLH **Tech:** KLH
Seq Number: 846985

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	6.14			SU	03/09/11 15:30		1

Analytical Method: Paint Filter Liquids Test by SW-9095
Analyst: RGF **Tech:** RGF
Seq Number: 847224

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass				03/10/11 03:00	U	1

Project: Florida Standard List of Methods

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 408371

City of Sunrise, Fort Lauderdale, FL

COC110302EOH01.xlsx

Sample Id: SPW INF Rag-B11MISC0208 **Matrix:** Sludge **% Moisture:**
Lab Sample Id: 408371-001 **Date Collected:** Mar-02-11 00:00
Date Received: Mar-02-11 12:45

Analytical Method: TCLP Herbicides by SW-846 1311/8151A **Prep Method:** SW8151A_EXT
Analyst: LER **Date Prep:** Mar-07-11 19:50 **Tech:** MBA
Seq Number: 847320

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
2,4,5-TP (Silvex)	93-72-1	U	0.100	0.0246	mg/L	03/10/11 02:29	U	1
2,4-D	94-75-7	U	0.100	0.0203	mg/L	03/10/11 02:29	U	1

Analytical Method: TCLP Mercury by SW1311/7470A **Prep Method:** SW7470P
Analyst: SOA **Date Prep:** Mar-08-11 11:30 **Tech:** SOA
Seq Number: 846764

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	U	0.000200	0.0000593	mg/L	03/08/11 15:07	U	1

Analytical Method: TCLP Metals by SW846-1311/6010B **Prep Method:** SW3010A
Analyst: IST **Date Prep:** Mar-08-11 13:00 **Tech:** TEM
Seq Number: 847209

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**0.0138**	0.0100	0.00450	mg/L	03/09/11 13:54	V	1
Barium	7440-39-3	**0.121**	0.0100	0.00210	mg/L	03/09/11 13:54	V	1
Cadmium	7440-43-9	U	0.00500	0.00110	mg/L	03/09/11 13:54	U	1
Chromium	7440-47-3	U	0.00500	0.00260	mg/L	03/09/11 13:54	U	1
Lead	7439-92-1	U	0.0100	0.00470	mg/L	03/09/11 13:54	U	1
Selenium	7782-49-2	**0.0303**	0.0300	0.00670	mg/L	03/09/11 13:54	V	1
Silver	7440-22-4	U	0.0200	0.00540	mg/L	03/09/11 13:54	U	1

Analytical Method: TCLP SVOCs by SW846 8270C **Prep Method:** SW3510C
Analyst: BAT **Date Prep:** Mar-09-11 13:00 **Tech:** HEA
Seq Number: 847756

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,4-Dichlorobenzene	106-46-7	U	0.0200	0.00140	mg/L	03/12/11 05:26	U	1
2,4,5-Trichlorophenol	95-95-4	U	0.0200	0.00190	mg/L	03/12/11 05:26	U	1
2,4,6-Trichlorophenol	88-06-2	U	0.00500	0.00140	mg/L	03/12/11 05:26	U	1
2,4-Dinitrotoluene	121-14-2	U	0.00225	0.00160	mg/L	03/12/11 05:26	U	1
2-methylphenol	95-48-7	U	0.0200	0.00110	mg/L	03/12/11 05:26	U	1
3&4-Methylphenol		**0.0460**	0.0200	0.00115	mg/L	03/12/11 05:26		1
Hexachlorobenzene	118-74-1	U	0.00500	0.00160	mg/L	03/12/11 05:26	U	1
Hexachlorobutadiene	87-68-3	U	0.0200	0.00230	mg/L	03/12/11 05:26	U	1
Hexachloroethane	67-72-1	U	0.0200	0.00180	mg/L	03/12/11 05:26	U	1
Nitrobenzene	98-95-3	U	0.0100	0.00160	mg/L	03/12/11 05:26	U	1
Pentachlorophenol	87-86-5	U	0.0500	0.00350	mg/L	03/12/11 05:26	U	1
Pyridine	110-86-1	U	0.0500	0.0445	mg/L	03/12/11 05:26	U	1

Project: Florida Standard List of Methods

City of Sunrise, Fort Lauderdale, FL

COC110302EOH01.xlsx

Sample Id: SPW INF Rag-B11MISC0208 **Matrix:** Sludge **% Moisture:**
Lab Sample Id: 408371-001 **Date Collected:** Mar-02-11 00:00
Date Received: Mar-02-11 12:45

Analytical Method: TCLP Pesticides by SW8081A **Prep Method:** SW3510C
Analyst: JGO **Date Prep:** Mar-09-11 10:00 **Tech:** HEE
Seq Number: 847143

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Heptachlor Epoxide	1024-57-3	U	0.00250	0.000167	mg/L	03/10/11 05:01	U	1
Chlordane	57-74-9	U	0.0500	0.00315	mg/L	03/10/11 05:01	U	1
Endrin	72-20-8	U	0.00500	0.000359	mg/L	03/10/11 05:01	U	1
Gamma-BHC (Lindane)	8-89-9	U	0.00250	0.000282	mg/L	03/10/11 05:01	U	1
Heptachlor	76-44-8	U	0.00250	0.000576	mg/L	03/10/11 05:01	U	1
Methoxychlor	72-43-5	U	0.00250	0.000730	mg/L	03/10/11 05:01	U	1
Toxaphene	8001-35-2	U	0.150	0.0236	mg/L	03/10/11 05:01	U	1

Analytical Method: TCLP VOAs by EPA 8260B **Prep Method:** SW5030B
Analyst: ROL **Date Prep:** Mar-09-11 08:00 **Tech:** VAJ
Seq Number: 846980

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	U	0.0500	0.0125	mg/L	03/09/11 16:56	U	50
2-Butanone	78-93-3	U	0.500	0.0843	mg/L	03/09/11 16:56	U	50
Carbon Tetrachloride	56-23-5	U	0.0500	0.0114	mg/L	03/09/11 16:56	U	50
Chlorobenzene	108-90-7	U	0.0500	0.00882	mg/L	03/09/11 16:56	U	50
Chloroform	67-66-3	U	0.0500	0.00609	mg/L	03/09/11 16:56	U	50
1,2-Dichloroethane	107-06-2	U	0.0500	0.00605	mg/L	03/09/11 16:56	U	50
1,1-Dichloroethene	75-35-4	U	0.0500	0.00694	mg/L	03/09/11 16:56	U	50
Tetrachloroethylene	127-18-4	U	0.0500	0.00489	mg/L	03/09/11 16:56	U	50
Trichloroethene	79-01-6	U	0.0500	0.0179	mg/L	03/09/11 16:56	U	50
Vinyl Chloride	75-01-4	U	0.0500	0.00960	mg/L	03/09/11 16:56	U	50

Project: Florida Standard List of Methods

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 408371

City of Sunrise, Fort Lauderdale, FL

COC110302EOH01.xlsx

Sample Id: SPW INF Grit-B11MISC0210	**Matrix:** Sludge	**% Moisture:** 60
Lab Sample Id: 408371-003	**Date Collected:** Mar-02-11 00:00	**Basis:** Dry Weight
	Date Received: Mar-02-11 12:45	

Analytical Method: Reactive Sulfide by SW 9030B
Analyst: ARM
Tech: ARM
Seq Number: 846794

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Sulfide	105-05-2	70.0	125	16.8	mg/kg	03/08/11 17:15	I	10

Project: Florida Standard List of Methods

City of Sunrise, Fort Lauderdale, FL

COC110302EOH01.xlsx

Sample Id: SPW INF Grit-B11MISC0210 **Matrix:** Sludge **% Moisture:**
Lab Sample Id: 408371-003 **Date Collected:** Mar-02-11 00:00 **Basis:** Wet Weight
Date Received: Mar-02-11 12:45

Analytical Method: Percent Moisture
Analyst: ARM **Tech:** ARM
Seq Number: 846101

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Solids, percent		40.0			%	03/03/11 09:41		1

Analytical Method: Reactive Cyanide by EPA 9010
Analyst: RGF **Tech:** DAD
Seq Number: 846802

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Cyanide	57-12-5	U	2.00	0.176	mg/kg	03/08/11 18:21	U	10

Analytical Method: Soil pH by EPA 9045C
Analyst: KLH **Tech:** KLH
Seq Number: 846985

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	6.82			SU	03/09/11 15:30		1

Analytical Method: Paint Filter Liquids Test by SW-9095
Analyst: RGF **Tech:** RGF
Seq Number: 847224

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Paint Filter	PAINFILTER	Pass				03/10/11 03:00	U	1

Project: Florida Standard List of Methods

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 408371

City of Sunrise, Fort Lauderdale, FL

COC110302EOH01.xlsx

Sample Id: SPW INF Grit-B11MISC0210 **Matrix:** Sludge **% Moisture:**
Lab Sample Id: 408371-003 **Date Collected:** Mar-02-11 00:00
Date Received: Mar-02-11 12:45

Analytical Method: TCLP Herbicides by SW-846 1311/8151A **Prep Method:** SW8151A_EXT
Analyst: LER **Date Prep:** Mar-07-11 19:50 **Tech:** MBA
Seq Number: 847320

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
2,4,5-TP (Silvex)	93-72-1	U	0.100	0.0246	mg/L	03/10/11 04:33	U	1
2,4-D	94-75-7	U	0.100	0.0203	mg/L	03/10/11 04:33	U	1

Analytical Method: TCLP Mercury by SW1311/7470A **Prep Method:** SW7470P
Analyst: SOA **Date Prep:** Mar-08-11 11:30 **Tech:** SOA
Seq Number: 846764

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	U	0.000200	0.0000593	mg/L	03/08/11 15:10	U	1

Analytical Method: TCLP Metals by SW846-1311/6010B **Prep Method:** SW3010A
Analyst: IST **Date Prep:** Mar-08-11 13:00 **Tech:** TEM
Seq Number: 847209

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	0.0176	0.0100	0.00450	mg/L	03/09/11 14:01	V	1
Barium	7440-39-3	0.104	0.0100	0.00210	mg/L	03/09/11 14:01	V	1
Cadmium	7440-43-9	U	0.00500	0.00110	mg/L	03/09/11 14:01	U	1
Chromium	7440-47-3	0.00683	0.00500	0.00260	mg/L	03/09/11 14:01		1
Lead	7439-92-1	U	0.0100	0.00470	mg/L	03/09/11 14:01	U	1
Selenium	7782-49-2	0.0611	0.0300	0.00670	mg/L	03/09/11 14:01	V	1
Silver	7440-22-4	U	0.0200	0.00540	mg/L	03/09/11 14:01	U	1

Analytical Method: TCLP SVOCs by SW846 8270C **Prep Method:** SW3510C
Analyst: BAT **Date Prep:** Mar-09-11 13:00 **Tech:** HEA
Seq Number: 847756

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,4-Dichlorobenzene	106-46-7	U	0.0200	0.00140	mg/L	03/12/11 06:01	U	1
2,4,5-Trichlorophenol	95-95-4	U	0.0200	0.00190	mg/L	03/12/11 06:01	U	1
2,4,6-Trichlorophenol	88-06-2	U	0.00500	0.00140	mg/L	03/12/11 06:01	U	1
2,4-Dinitrotoluene	121-14-2	U	0.00225	0.00160	mg/L	03/12/11 06:01	U	1
2-methylphenol	95-48-7	U	0.0200	0.00110	mg/L	03/12/11 06:01	U	1
3&4-Methylphenol		0.0758	0.0200	0.00115	mg/L	03/12/11 06:01		1
Hexachlorobenzene	118-74-1	U	0.00500	0.00160	mg/L	03/12/11 06:01	U	1
Hexachlorobutadiene	87-68-3	U	0.0200	0.00230	mg/L	03/12/11 06:01	U	1
Hexachloroethane	67-72-1	U	0.0200	0.00180	mg/L	03/12/11 06:01	U	1
Nitrobenzene	98-95-3	U	0.0100	0.00160	mg/L	03/12/11 06:01	U	1
Pentachlorophenol	87-86-5	U	0.0500	0.00350	mg/L	03/12/11 06:01	U	1
Pyridine	110-86-1	U	0.0500	0.0445	mg/L	03/12/11 06:01	U	1

Project: Florida Standard List of Methods

Certificate of Analytical Results 408371

City of Sunrise, Fort Lauderdale, FL

COC110302EOH01.xlsx

Sample Id: SPW INF Grit-B11MISC0210 **Matrix:** Sludge **% Moisture:**
Lab Sample Id: 408371-003 **Date Collected:** Mar-02-11 00:00
Date Received: Mar-02-11 12:45

Analytical Method: TCLP Pesticides by SW8081A **Prep Method:** SW3510C
Analyst: JGO **Date Prep:** Mar-09-11 10:00 **Tech:** HEE
Seq Number: 847143

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Heptachlor Epoxide	1024-57-3	U	0.00250	0.000167	mg/L	03/10/11 05:21	U	1
Chlordane	57-74-9	U	0.0500	0.00315	mg/L	03/10/11 05:21	U	1
Endrin	72-20-8	U	0.00500	0.000359	mg/L	03/10/11 05:21	U	1
Gamma-BHC (Lindane)	8-89-9	U	0.00250	0.000282	mg/L	03/10/11 05:21	U	1
Heptachlor	76-44-8	U	0.00250	0.000576	mg/L	03/10/11 05:21	U	1
Methoxychlor	72-43-5	U	0.00250	0.000730	mg/L	03/10/11 05:21	U	1
Toxaphene	8001-35-2	U	0.150	0.0236	mg/L	03/10/11 05:21	U	1

Analytical Method: TCLP VOAs by EPA 8260B **Prep Method:** SW5030B
Analyst: ROL **Date Prep:** Mar-09-11 08:00 **Tech:** VAJ
Seq Number: 846980

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	U	0.0500	0.0125	mg/L	03/09/11 16:33	U	50
2-Butanone	78-93-3	17.1	0.500	0.0843	mg/L	03/09/11 16:33		50
Carbon Tetrachloride	56-23-5	U	0.0500	0.0114	mg/L	03/09/11 16:33	U	50
Chlorobenzene	108-90-7	U	0.0500	0.00882	mg/L	03/09/11 16:33	U	50
Chloroform	67-66-3	U	0.0500	0.00609	mg/L	03/09/11 16:33	U	50
1,2-Dichloroethane	107-06-2	U	0.0500	0.00605	mg/L	03/09/11 16:33	U	50
1,1-Dichloroethene	75-35-4	U	0.0500	0.00694	mg/L	03/09/11 16:33	U	50
Tetrachloroethylene	127-18-4	U	0.0500	0.00489	mg/L	03/09/11 16:33	U	50
Trichloroethene	79-01-6	U	0.0500	0.0179	mg/L	03/09/11 16:33	U	50
Vinyl Chloride	75-01-4	U	0.0500	0.00960	mg/L	03/09/11 16:33	U	50

Project: Florida Standard List of Methods

FLORIDA Flagging Criteria

A Value reported is the mean (average) of two or more determinations. This code shall be used if the reported value is the average of results for two or more discrete and separate samples. These samples shall have been processed and analyzed independently. Do not use this code if the data are the result of replicate analysis on the same sample aliquot, extract or digestate.

B Results based upon colony counts outside the acceptable range. This code applies to microbiological tests and specifically to membrane filter colony counts. The code is to be used if the colony count is generated from a plate in which the total number of coliform colonies is outside the method indicated ideal range. This code is not to be used if a 100 mL sample has been filtered and the colony count is less than the lower value of the ideal range.

F When reporting species: F indicates the female sex. Otherwise it indicates RPD value is outside the acceptable range.

H Value based on field kit determination; results may not be accurate. This code shall be used if a field screening test (i.e., field gas chromatograph data, immunoassay, vendor-supplied field kit, etc.) was used to generate the value and the field kit or method has not been recognized by the Department as equivalent to laboratory methods.

I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

J Estimated value. A "J" value shall be accompanied by a narrative justification for its use. Where possible, the organization shall report whether the actual value is less than or greater than the reported value. A "J" value shall not be used as a substitute for K, L, M, T, V, or Y, however, if additional reasons exist for identifying the value as estimate (e.g., matrix spiked failed to meet acceptance criteria), the "J" code may be added to a K, L, M, T, V, or Y. The following are some examples of narrative descriptions that may accompany a "J" code: .

J1: No known quality control criteria exist for the component;

J2: The reported value failed to meet the established quality control criteria for either precision or accuracy (the specific failure must be identified);

J3: The sample matrix interfered with the ability to make any accurate determination;

J4: The data are questionable because of improper laboratory or field protocols (e.g., composite sample was collected instead of a grab sample).

J5: The field calibration verification did not meet calibration acceptance criteria.

J6: QC protocol not followed.

11381 Meadowglen Lane Suite L Houston, Tx 77082-2647 — Phone (281) 589-0692 — Fax (281) 589-0695
11078 Morrison Rd., Suite D, Dallas, TX 75229 — (972) 481-9999 — (972) 481-9998
5309 Wurzbach, Ste 104 San Antonio TX 78238 — (210) 509-3334 — (201) 509-3335
2505 N. Falkenburg Rd., Tampa, FL 33619 — (813) 620-2000 — (813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014 — (305) 823-8500 — (305) 823-8555

J7: B/A results for Chlorophyll does not meet 1 - 1.7 ratio.

K Off-scale low. Actual value is known to be less than the value given. This code shall be used if:

1. The value is less than the lowest calibration standard and the calibration curve is known to be non-linear; or
2. The value is known to be less than the reported value based on sample size, dilution. This code shall not be used to report values that are less than the laboratory practical quantitation limit or laboratory method detection limit.

L Off-scale high. Actual value is known to be greater than value given. To be used when the concentration of the analyte is above the acceptable level for quantitation (exceeds the linear range or highest calibration standard) and the calibration curve is known to exhibit a negative deflection.

M When reporting chemical analyses: presence of material is verified but not quantified; the actual value is less than the value given. The reported value shall be the laboratory practical quantitation limit. This code shall be used if the level is too low to permit accurate quantification, but the estimated concentration is greater than the method detection limit. If the value is less than the method detection limit use "T" below.

N Presumptive evidence of presence of material. This qualifier shall be used if:

1. The component has been tentatively identified based on mass spectral library search; or
2. There is an indication that the analyte is present, but quality control requirements for confirmation were not met (i.e., presence of analyte was not confirmed by alternative procedures).

O Sampled, but analysis lost or not performed.

Q Sample held beyond the accepted holding time. This code shall be used if the value is derived from a sample that was prepared or analyzed after the approved holding time restrictions for sample preparation or analysis.

T Value reported is less than the laboratory method detection limit. The value is reported for informational purposes, only and shall not be used in statistical analysis.

U Indicates that the compound was analyzed for but not detected. This symbolshall be used to indicate that the specified component was not detected. The value associated with the qualifier shall be the laboratory method detection limit. Unless requested by the client, less than the method detection limit values shall not be reported (see "T" above).

V Indicates that the analyte was detected in both the sample and the associated method blank. Note: the value in the blank shall not be subtracted from associated samples.

XENCO Laboratories

Flagging Criteria

Y The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.

Z Too many colonies were present for accurate counting. Historically, this condition has been reported as "too numerous to count" (TNTC). The "Z" qualifier code shall be reported when the total number of colonies of all types is more than 200 in all dilutions of the sample. When applicable to the observed test results, a numeric value for the colony count for the microorganism tested shall be estimated from the highest dilution factor (smallest sample volume) used for the test and reported with the qualifier code.

? Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.

* Not reported due to interference.

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The following codes deal with certain aspects of field activities. The codes shall be used if the laboratory has knowledge of the specific sampling event. The codes shall be added by the organization collecting samples if they apply:

D The sample result was reported from a dilution.

E Indicates that extra samples were taken at composite stations.

R Significant rain in the past 48 hours. (Significant rain typically involves rain in excess of 1/2 inch within the past 48 hours.) This code shall be used when the rainfall might contribute to a lower than normal value.

! Data deviate from historically established concentration ranges.

+ Outside XENCO's scope of NELAC accreditation

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH01.xlsx

Work Orders : 408371,

Project ID: NB

Lab Batch #: 847320 **Sample:** 597240-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/10/11 00:25

TCLP Herbicides by SW-846 1311/8151A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2,4-Dichlorophenylacetic Acid	355	500	71	46-142	

Lab Batch #: 847320 **Sample:** 597240-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/10/11 00:56

TCLP Herbicides by SW-846 1311/8151A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2,4-Dichlorophenylacetic Acid	670.000	500	134	46-142	

Lab Batch #: 847320 **Sample:** 408371-001 S / MS **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 01:27

TCLP Herbicides by SW-846 1311/8151A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2,4-Dichlorophenylacetic Acid	635.000	500	127	46-142	

Lab Batch #: 847320 **Sample:** 408371-001 SD / MSD **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 01:58

TCLP Herbicides by SW-846 1311/8151A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2,4-Dichlorophenylacetic Acid	535.000	500	107	46-142	

Lab Batch #: 847320 **Sample:** 408371-001 / SMP **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 02:29

TCLP Herbicides by SW-846 1311/8151A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2,4-Dichlorophenylacetic Acid	465	500	93	46-142	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH01.xlsx

Work Orders : 408371, **Project ID:** NB

Lab Batch #: 847320 **Sample:** 408371-003 / SMP **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 04:33

TCLP Herbicides by SW-846 1311/8151A Analytes	SURROGATE RECOVERY STUDY Amount Found |A|	True Amount |B|	Recovery %R |D|	Control Limits %R	Flags
2,4-Dichlorophenylacetic Acid	585	500	117	46-142	

Lab Batch #: 847143 **Sample:** 597239-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/10/11 00:03

TCLP Pesticides by SW8081A Analytes	SURROGATE RECOVERY STUDY Amount Found |A|	True Amount |B|	Recovery %R |D|	Control Limits %R	Flags
Decachlorobiphenyl	71.7	100	72	11-170	
Tetrachloro-m-xylene	68.1	100	68	15-157	

Lab Batch #: 847143 **Sample:** 597239-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/10/11 01:03

TCLP Pesticides by SW8081A Analytes	SURROGATE RECOVERY STUDY Amount Found |A|	True Amount |B|	Recovery %R |D|	Control Limits %R	Flags
Decachlorobiphenyl	61.000	100	61	11-170	
Tetrachloro-m-xylene	63.100	100	63	15-157	

Lab Batch #: 847143 **Sample:** 408368-001 S / MS **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 02:22

TCLP Pesticides by SW8081A Analytes	SURROGATE RECOVERY STUDY Amount Found |A|	True Amount |B|	Recovery %R |D|	Control Limits %R	Flags
Decachlorobiphenyl	37.000	100	37	11-170	
Tetrachloro-m-xylene	54.700	100	55	15-157	

Lab Batch #: 847143 **Sample:** 408368-001 SD / MSD **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 02:42

TCLP Pesticides by SW8081A Analytes	SURROGATE RECOVERY STUDY Amount Found |A|	True Amount |B|	Recovery %R |D|	Control Limits %R	Flags
Decachlorobiphenyl	48.400	100	48	11-170	
Tetrachloro-m-xylene	62.300	100	62	15-157	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** *Poor recoveries due to dilution*
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH01.xlsx

Work Orders : 408371,

Project ID: NB

Lab Batch #: 847143 **Sample:** 408371-001 / SMP **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 05:01

TCLP Pesticides by SW8081A Analytes	SURROGATE RECOVERY STUDY Amount Found |A|	True Amount |B|	Recovery %R |D|	Control Limits %R	Flags
Decachlorobiphenyl	34.1	100	34	11-170	
Tetrachloro-m-xylene	47.3	100	47	15-157	

Lab Batch #: 847143 **Sample:** 408371-003 / SMP **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 05:21

TCLP Pesticides by SW8081A Analytes	SURROGATE RECOVERY STUDY Amount Found |A|	True Amount |B|	Recovery %R |D|	Control Limits %R	Flags
Decachlorobiphenyl	58.3	100	58	11-170	
Tetrachloro-m-xylene	67.3	100	67	15-157	

Lab Batch #: 847756 **Sample:** 597227-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/12/11 02:30

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found |A|	True Amount |B|	Recovery %R |D|	Control Limits %R	Flags
2-Fluorobiphenyl	0.142	0.250	57	19-126	
2-Fluorophenol	0.192	0.500	38	28-62	
Nitrobenzene-d5	0.164	0.250	66	10-130	
Phenol-d6	0.119	0.500	24	10-59	
Terphenyl-D14	0.221	0.250	88	27-133	
2,4,6-Tribromophenol	0.384	0.500	77	48-132	

Lab Batch #: 847756 **Sample:** 597227-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/12/11 02:48

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found |A|	True Amount |B|	Recovery %R |D|	Control Limits %R	Flags
2-Fluorobiphenyl	0.148	0.250	59	19-126	
2-Fluorophenol	0.181	0.500	36	28-62	
Nitrobenzene-d5	0.171	0.250	68	10-130	
Phenol-d6	0.114	0.500	23	10-59	
Terphenyl-D14	0.203	0.250	81	27-133	
2,4,6-Tribromophenol	0.368	0.500	74	48-132	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH01.xlsx

Work Orders : 408371,

Project ID: NB

Lab Batch #: 847756 **Sample:** 408366-001 S / MS **Batch:** 1 **Matrix:** Sludge

Units: mg/L **Date Analyzed:** 03/12/11 03:06

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.148	0.250	59	19-126	
2-Fluorophenol	0.179	0.500	36	28-62	
Nitrobenzene-d5	0.155	0.250	62	10-130	
Phenol-d6	0.108	0.500	22	10-59	
Terphenyl-D14	0.180	0.250	72	27-133	
2,4,6-Tribromophenol	0.381	0.500	76	48-132	

Lab Batch #: 847756 **Sample:** 408366-001 SD / MSD **Batch:** 1 **Matrix:** Sludge

Units: mg/L **Date Analyzed:** 03/12/11 03:23

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.156	0.250	62	19-126	
2-Fluorophenol	0.187	0.500	37	28-62	
Nitrobenzene-d5	0.165	0.250	66	10-130	
Phenol-d6	0.110	0.500	22	10-59	
Terphenyl-D14	0.202	0.250	81	27-133	
2,4,6-Tribromophenol	0.414	0.500	83	48-132	

Lab Batch #: 847756 **Sample:** 408371-001 / SMP **Batch:** 1 **Matrix:** Sludge

Units: mg/L **Date Analyzed:** 03/12/11 05:26

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.149	0.250	60	19-126	
2-Fluorophenol	0.195	0.500	39	28-62	
Nitrobenzene-d5	0.161	0.250	64	10-130	
Phenol-d6	0.123	0.500	25	10-59	
Terphenyl-D14	0.213	0.250	85	27-133	
2,4,6-Tribromophenol	0.431	0.500	86	48-132	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** *Poor recoveries due to dilution*
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH01.xlsx

Work Orders : 408371,

Project ID: NB

Lab Batch #: 847756 **Sample:** 408371-003 / SMP **Batch:** 1 **Matrix:** Sludge

Units: mg/L **Date Analyzed:** 03/12/11 06:01

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.159	0.250	64	19-126	
2-Fluorophenol	0.203	0.500	41	28-62	
Nitrobenzene-d5	0.173	0.250	69	10-130	
Phenol-d6	0.115	0.500	23	10-59	
Terphenyl-D14	0.201	0.250	80	27-133	
2,4,6-Tribromophenol	0.454	0.500	91	48-132	

Lab Batch #: 846980 **Sample:** 597548-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/09/11 11:34

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28	30	93	83-118	
Dibromofluoromethane	32	30	107	76-133	
Toluene-D8	30	30	100	86-108	

Lab Batch #: 846980 **Sample:** 597548-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/09/11 12:52

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29	30	97	83-118	
Dibromofluoromethane	31	30	103	76-133	
Toluene-D8	30	30	100	86-108	

Lab Batch #: 846980 **Sample:** 408371-003 / SMP **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/09/11 16:33

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30	30	100	83-118	
Dibromofluoromethane	32	30	107	76-133	
Toluene-D8	31	30	103	86-108	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH01.xlsx

Work Orders : 408371,

Project ID: NB

Lab Batch #: 846980 **Sample:** 408371-001 / SMP **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/09/11 16:56

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30	30	100	83-118	
Dibromofluoromethane	32	30	107	76-133	
Toluene-D8	30	30	100	86-108	

Lab Batch #: 846980 **Sample:** 408404-001 S / MS **Batch:** 1 **Matrix:** Solid

Units: ug/L **Date Analyzed:** 03/09/11 19:20

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27	30	90	83-118	
Dibromofluoromethane	32	30	107	76-133	
Toluene-D8	30	30	100	86-108	

Lab Batch #: 846980 **Sample:** 408404-001 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: ug/L **Date Analyzed:** 03/09/11 19:44

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29	30	97	83-118	
Dibromofluoromethane	31	30	103	76-133	
Toluene-D8	30	30	100	86-108	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Blank Summary 408371

City of Sunrise, Fort Lauderdale, FL

COC110302EOH01.xlsx

Sample Id: **597113-1-BLK** Matrix: **WATER**
Lab Sample Id: **597113-1-BLK**

Analytical Method: TCLP Metals by SW846-1311/6010B Prep Method: SW3010A

Date Analyzed: Mar-09-11 13:10 Analyst: IST Date Prep: Mar-08-11 13:00 Tech: TEM
Seq Number: 847209

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Arsenic	7440-38-2	0.0145	0.0100	0.00450	mg/L	V	1
Barium	7440-39-3	0.0375	0.0100	0.00210	mg/L	V	1
Cadmium	7440-43-9	U	0.00500	0.00110	mg/L	U	1
Chromium	7440-47-3	U	0.00500	0.00260	mg/L	U	1
Lead	7439-92-1	U	0.0100	0.00470	mg/L	U	1
Selenium	7782-49-2	0.0146	0.0300	0.00670	mg/L	VI	1
Silver	7440-22-4	U	0.0200	0.00540	mg/L	U	1

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Sample Id: **597227-1-BLK** Matrix: **WATER**
Lab Sample Id: **597227-1-BLK**

Analytical Method: TCLP SVOCs by SW846 8270C Prep Method: SW3510C

Date Analyzed: Mar-12-11 02:30 Analyst: BAT Date Prep: Mar-09-11 13:00 Tech: HEA
Seq Number: 847756

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
1,4-Dichlorobenzene	106-46-7	U	0.0200	0.00140	mg/L	U	1
2,4,5-Trichlorophenol	95-95-4	U	0.0200	0.00190	mg/L	U	1
2,4,6-Trichlorophenol	88-06-2	U	0.00500	0.00140	mg/L	U	1
2,4-Dinitrotoluene	121-14-2	U	0.00225	0.00160	mg/L	U	1
2-methylphenol	95-48-7	U	0.0200	0.00110	mg/L	U	1
3&4-Methylphenol		U	0.0200	0.00115	mg/L	U	1
Hexachlorobenzene	118-74-1	U	0.00500	0.00160	mg/L	U	1
Hexachlorobutadiene	87-68-3	U	0.0200	0.00230	mg/L	U	1
Hexachloroethane	67-72-1	U	0.0200	0.00180	mg/L	U	1
Nitrobenzene	98-95-3	U	0.0100	0.00160	mg/L	U	1
Pentachlorophenol	87-86-5	U	0.0500	0.00350	mg/L	U	1
Pyridine	110-86-1	U	0.0500	0.0445	mg/L	U	1

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Sample Id: **597239-1-BLK** Matrix: **WATER**
Lab Sample Id: **597239-1-BLK**

Analytical Method: TCLP Pesticides by SW8081A Prep Method: SW3510C

Date Analyzed: Mar-10-11 00:03 Analyst: JGO Date Prep: Mar-09-11 10:00 Tech: HEE
Seq Number: 847143

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Heptachlor Epoxide	1024-57-3	U	0.00250	0.000167	mg/L	U	1
Chlordane	57-74-9	U	0.0500	0.00315	mg/L	U	1
Endrin	72-20-8	U	0.00500	0.000359	mg/L	U	1
Gamma-BHC (Lindane)	8-89-9	U	0.00250	0.000282	mg/L	U	1
Heptachlor	76-44-8	U	0.00250	0.000576	mg/L	U	1
Methoxychlor	72-43-5	U	0.00250	0.000730	mg/L	U	1
Toxaphene	8001-35-2	U	0.150	0.0236	mg/L	U	1

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Sample Id: **597240-1-BLK** Matrix: **WATER**
Lab Sample Id: **597240-1-BLK**

Analytical Method: TCLP Herbicides by SW-846 1311/8151A Prep Method: SW8151A_EXT

Date Analyzed: Mar-10-11 00:25 Analyst: LER Date Prep: Mar-07-11 19:50 Tech: MBA
Seq Number: 847320

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
2,4,5-TP (Silvex)	93-72-1	U	0.100	0.0246	mg/L	U	1
2,4-D	94-75-7	U	0.100	0.0203	mg/L	U	1

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Sample Id: **597411-1-BLK** Matrix: **WATER**
Lab Sample Id: **597411-1-BLK**

Analytical Method: TCLP Mercury by SW1311/7470A Prep Method: SW7470P

Date Analyzed: Mar-08-11 14:38 Analyst: SOA Date Prep: Mar-08-11 11:30 Tech: SOA
Seq Number: 846764

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Mercury	7439-97-6	U	0.000200	0.0000593	mg/L	U	1

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Sample Id: **597548-1-BLK** Matrix: **WATER**

Lab Sample Id: **597548-1-BLK**

Analytical Method: TCLP VOAs by EPA 8260B Prep Method: SW5030B

Date Analyzed: Mar-09-11 12:52 Analyst: ROL Date Prep: Mar-09-11 08:00 Tech: VAJ

Seq Number: 846980

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Benzene	71-43-2	U	0.0500	0.0125	mg/L	U	50
2-Butanone	78-93-3	U	0.500	0.0843	mg/L	U	50
Carbon Tetrachloride	56-23-5	U	0.0500	0.0114	mg/L	U	50
Chlorobenzene	108-90-7	U	0.0500	0.00882	mg/L	U	50
Chloroform	67-66-3	U	0.0500	0.00609	mg/L	U	50
1,2-Dichloroethane	107-06-2	U	0.0500	0.00605	mg/L	U	50
1,1-Dichloroethene	75-35-4	U	0.0500	0.00694	mg/L	U	50
Tetrachloroethylene	127-18-4	U	0.0500	0.00489	mg/L	U	50
Trichloroethene	79-01-6	U	0.0500	0.0179	mg/L	U	50
Vinyl Chloride	75-01-4	U	0.0500	0.00960	mg/L	U	50

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Sample Id: **846101-1-BLK** Matrix: **SOLID**
Lab Sample Id: **846101-1-BLK**

Analytical Method: Percent Moisture Prep Method:

Date Analyzed: Mar-03-11 09:41 Analyst: ARM Date Prep: Tech: ARM
Seq Number: 846101

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Percent Moisture	TMOIST	U	1.00	1.00	%	U	1

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Sample Id: **846104-1-BLK** Matrix: **SOLID**
Lab Sample Id: **846104-1-BLK**

Analytical Method: Total Solids by SM2540G Prep Method:

Date Analyzed: Mar-03-11 09:22 Analyst: ARM Date Prep: Tech: ARM
Seq Number: 846104

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Total solids		U			mg/kg	U	1

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Sample Id: **846794-1-BLK** Matrix: **SOLID**
Lab Sample Id: **846794-1-BLK**

Analytical Method: Reactive Sulfide by SW 9030B Prep Method:

Date Analyzed: Mar-08-11 17:15 Analyst: ARM Date Prep: Tech: ARM
Seq Number: 846794

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Sulfide	105-05-2	U	500	50.0	mg/kg	U	10

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Sample Id: **846802-1-BLK** Matrix: **SOLID**
Lab Sample Id: **846802-1-BLK**

Analytical Method: Reactive Cyanide by EPA 9010 Prep Method:

Date Analyzed: Mar-08-11 18:08 Analyst: RGF Date Prep: Tech: DAD
Seq Number: 846802

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Cyanide	57-12-5	U	2.00	0.176	mg/kg	U	10

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Sample Id: **847224-1-BLK** Matrix: **SOLID**
Lab Sample Id: **847224-1-BLK**

Analytical Method: Paint Filter Liquids Test by SW-9095 Prep Method:

Date Analyzed: Mar-10-11 03:00 Analyst: RGF Date Prep: Tech: RGF
Seq Number: 847224

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Paint Filter	PAIFILTER	Pass				U	1

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Analytical Method: TCLP Herbicides by SW-846 1311/8151A — Prep Method: SW8151A_EXT
Seq Number: 847320 — Matrix: Water — Date Prep: 03/07/2011
MB Sample Id: 597240-1-BLK — LCS Sample Id: 597240-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
2,4,5-TP (Silvex)	<0.0246	250	0.345	138	35-160	mg/L	03/10/11 00:56	
2,4-D	<0.0203	250	0.250	100	25-166	mg/L	03/10/11 00:56	

Analytical Method: TCLP Herbicides by SW-846 1311/8151A — Prep Method: SW8151A_EXT
Seq Number: 847320 — Matrix: Sludge — Date Prep: 03/07/2011
Parent Sample Id: 408371-001 — MS Sample Id: 408371-001 S — MSD Sample Id: 408371-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
2,4,5-TP (Silvex)	<0.0246	0.25	0.330	132	0.280	112	35-160	16	20	mg/L	03/10/11 01:27	
2,4-D	<0.0203	0.25	0.245	98	0.210	84	25-166	15	20	mg/L	03/10/11 01:27	

Analytical Method: TCLP Mercury by SW1311/7470A — Prep Method: SW7470P
Seq Number: 846764 — Matrix: Water — Date Prep: 03/08/2011
MB Sample Id: 597411-1-BLK — LCS Sample Id: 597411-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Mercury	<0.0000593	2	0.00217	109	75-125	mg/L	03/08/11 14:40	

Analytical Method: TCLP Mercury by SW1311/7470A — Prep Method: SW7470P
Seq Number: 846764 — Matrix: Solid — Date Prep: 03/08/2011
Parent Sample Id: 408651-001 — MS Sample Id: 408651-001 S — MSD Sample Id: 408651-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0000930	0.002	0.00219	105	0.00221	106	75-125	1	20	mg/L	03/08/11 14:42	

Analytical Method: TCLP Metals by SW846-1311/6010B — Prep Method: SW3010A
Seq Number: 847209 — Matrix: Water — Date Prep: 03/08/2011
MB Sample Id: 597113-1-BLK — LCS Sample Id: 597113-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Arsenic	0.0145	1000	1.04	104	75-125	mg/L	03/09/11 13:17	
Barium	0.0375	1000	0.968	97	75-125	mg/L	03/09/11 13:17	
Cadmium	<0.00110	1000	0.992	99	75-125	mg/L	03/09/11 13:17	
Chromium	<0.00260	1000	0.977	98	0-125	mg/L	03/09/11 13:17	
Lead	<0.00470	1000	0.963	96	75-125	mg/L	03/09/11 13:17	
Selenium	0.0146	1000	1.08	108	75-125	mg/L	03/09/11 13:17	
Silver	<0.00540	500	0.574	115	75-125	mg/L	03/09/11 13:17	

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Analytical Method: TCLP Metals by SW846-1311/6010B — Prep Method: SW3010A
Seq Number: 847209 — Matrix: Sludge — Date Prep: 03/08/2011
Parent Sample Id: 408366-001 — MS Sample Id: 408366-001 S — MSD Sample Id: 408366-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	0.00927	1	1.02	101	0.994	98	75-125	3	20	mg/L	03/09/11 13:29	
Barium	0.0528	1	1.01	96	0.987	93	75-125	2	20	mg/L	03/09/11 13:29	
Cadmium	<0.00110	1	0.971	97	0.950	95	75-125	2	20	mg/L	03/09/11 13:29	
Chromium	<0.00260	1	0.955	96	0.934	93	0-125	2	20	mg/L	03/09/11 13:29	
Lead	<0.00470	1	0.940	94	0.928	93	75-125	1	20	mg/L	03/09/11 13:29	
Selenium	0.0270	1	1.06	103	1.04	101	75-125	2	20	mg/L	03/09/11 13:29	
Silver	<0.00540	0.5	0.557	111	0.557	111	75-125	0	20	mg/L	03/09/11 13:29	

Analytical Method: TCLP SVOCs by SW846 8270C — Prep Method: SW3510C
Seq Number: 847756 — Matrix: Water — Date Prep: 03/09/2011
MB Sample Id: 597227-1-BLK — LCS Sample Id: 597227-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
1,4-Dichlorobenzene	<0.00140	0.25	0.116	46	30-116	mg/L	03/12/11 02:48	
2,4,5-Trichlorophenol	<0.00190	0.25	0.176	70	45-127	mg/L	03/12/11 02:48	
2,4,6-Trichlorophenol	<0.00140	0.25	0.191	76	49-131	mg/L	03/12/11 02:48	
2,4-Dinitrotoluene	<0.00160	0.25	0.163	65	37-138	mg/L	03/12/11 02:48	
2-methylphenol	<0.00110	0.25	0.163	65	28-102	mg/L	03/12/11 02:48	
3&4-Methylphenol	<0.00115	0.5	0.245	49	24-76	mg/L	03/12/11 02:48	
Hexachlorobenzene	<0.00160	0.25	0.210	84	63-131	mg/L	03/12/11 02:48	
Hexachlorobutadiene	<0.00230	0.25	0.119	48	28-121	mg/L	03/12/11 02:48	
Hexachloroethane	<0.00180	0.25	0.108	43	18-131	mg/L	03/12/11 02:48	
Nitrobenzene	<0.00160	0.25	0.179	72	44-132	mg/L	03/12/11 02:48	
Pentachlorophenol	<0.00350	0.25	0.192	77	16-150	mg/L	03/12/11 02:48	
Pyridine	<0 0445	0.25	0.0615	25	10-77	mg/L	03/12/11 02:48	

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Analytical Method: TCLP SVOCs by SW846 8270C — Prep Method: SW3510C
Seq Number: 847756 — Matrix: Sludge — Date Prep: 03/09/2011
Parent Sample Id: 408366-001 — MS Sample Id: 408366-001 S — MSD Sample Id: 408366-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,4-Dichlorobenzene	<0.00140	0.25	0.127	51	0.125	50	30-116	2	20	mg/L	03/12/11 03:06	
2,4,5-Trichlorophenol	<0.00190	0.25	0.200	80	0.207	83	45-127	3	20	mg/L	03/12/11 03:06	
2,4,6-Trichlorophenol	<0.00140	0.25	0.202	81	0.206	82	49-131	2	20	mg/L	03/12/11 03:06	
2,4-Dinitrotoluene	<0.00160	0.25	0.166	66	0.176	70	37-138	6	20	mg/L	03/12/11 03:06	
2-methylphenol	<0.00110	0.25	0.156	62	0.151	60	28-102	3	20	mg/L	03/12/11 03:06	
3&4-Methylphenol	0.0919	0.5	0.351	52	0.342	50	24-76	3	20	mg/L	03/12/11 03:06	
Hexachlorobenzene	<0.00160	0.25	0.204	82	0.198	79	63-131	3	20	mg/L	03/12/11 03:06	
Hexachlorobutadiene	<0.00230	0.25	0.145	58	0.136	54	28-121	6	20	mg/L	03/12/11 03:06	
Hexachloroethane	<0.00180	0.25	0.126	50	0.127	51	18-131	1	20	mg/L	03/12/11 03:06	
Nitrobenzene	<0.00160	0.25	0.177	71	0.170	68	44-132	4	20	mg/L	03/12/11 03:06	
Pentachlorophenol	<0.00350	0.25	0.238	95	0.236	94	16-150	1	20	mg/L	03/12/11 03:06	
Pyridine	<0.0445	0.25	0.0728	29	0.0777	31	10-77	7	20	mg/L	03/12/11 03:06	

Analytical Method: Total Solids by SM2540G
Seq Number: 846104 — Matrix: Sludge
Parent Sample Id: 408399-001 — MD Sample Id: 408399-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Total solids	356000	354000	1	20	mg/kg	03/03/11 09:22	

Analytical Method: Percent Moisture
Seq Number: 846101 — Matrix: Sludge
Parent Sample Id: 408399-001 — MD Sample Id: 408399-001 D

Parameter	Pareut Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	64.6	64.4	0	20	%	03/03/11 09:41	

Analytical Method: Percent Moisture
Seq Number: 846101 — Matrix: Soil
Parent Sample Id: 408330-006 — MD Sample Id: 408330-006 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	16.3	16.0	2	20	%	03/03/11 09:41	

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Analytical Method: TCLP Pesticides by SW8081A — Prep Method: SW3510C
Seq Number: 847143 — Matrix: Water — Date Prep: 03/09/2011
MB Sample Id: 597239-1-BLK — LCS Sample Id: 597239-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Endrin	<0.000359	5	0.004	80	10-170	mg/L	03/10/11 01:03	
Gamma-BHC (Lindane)	<0.000282	5	0.004	80	10-150	mg/L	03/10/11 01:03	
Heptachlor	<0.000576	5	0.003	60	11-141	mg/L	03/10/11 01:03	

Analytical Method: TCLP Pesticides by SW8081A — Prep Method: SW3510C
Seq Number: 847143 — Matrix: Sludge — Date Prep: 03/09/2011
Parent Sample Id: 408368-001 — MS Sample Id: 408368-001 S — MSD Sample Id: 408368-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Endrin	<0.000359	0.005	0.003	60	0.004	80	10-170	29	20	mg/L	03/10/11 02:22	J
Gamma-BHC (Lindane)	<0.000282	0.005	0.003	60	0.004	80	10-150	29	20	mg/L	03/10/11 02:22	J
Heptachlor	<0.000576	0.005	0.003	60	0.003	60	11-141	0	20	mg/L	03/10/11 02:22	

Analytical Method: TCLP VOAs by EPA 8260B — Prep Method: SW5030B
Seq Number: 846980 — Matrix: Water — Date Prep: 03/09/2011
MB Sample Id: 597548-1-BLK — LCS Sample Id: 597548-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.0125	2500	2.23	89	66-142	mg/L	03/09/11 11:34	
2-Butanone	<0.0843	2500	3.01	120	75-125	mg/L	03/09/11 11:34	
Carbon Tetrachloride	<0.0114	2500	2.13	85	62-125	mg/L	03/09/11 11:34	
Chlorobenzene	<0.00882	2500	2.29	92	60-133	mg/L	03/09/11 11:34	
Chloroform	<0.00609	2500	2.28	91	74-125	mg/L	03/09/11 11:34	
1,2-Dichloroethane	<0.00605	2500	2.48	99	68-127	mg/L	03/09/11 11:34	
1,1-Dichloroethene	<0.00694	2500	1.99	80	59-172	mg/L	03/09/11 11:34	
Tetrachloroethylene	<0.00489	2500	2.08	83	71-125	mg/L	03/09/11 11:34	
Trichloroethene	<0.0179	2500	2.22	89	62-137	mg/L	03/09/11 11:34	
Vinyl Chloride	<0.00960	2500	2.57	103	75-125	mg/L	03/09/11 11:34	

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Analytical Method: TCLP VOAs by EPA 8260B — Prep Method: SW5030B
Seq Number: 846980 — Matrix: Solid — Date Prep: 03/09/2011
Parent Sample Id: 408404-001 — MS Sample Id: 408404-001 S — MSD Sample Id: 408404-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0125	2.5	1.94	78	1.84	74	66-142	5	21	mg/L	03/09/11 19:20	
2-Butanone	<0.0843	2500	2.46	98	2.46	98	75-125	0	20	mg/L	03/09/11 19:20	
Carbon Tetrachloride	<0.000228	50	0.0370	74	0.0357	71	62-125	4	20	mg/L	03/09/11 19:20	
Chlorobenzene	<0.000176	50	0.0326	65	0.0309	62	60-133	5	21	mg/L	03/09/11 19:20	
Chloroform	<0.000122	50	0.0422	84	0.0397	79	74-125	6	20	mg/L	03/09/11 19:20	
1,2-Dichloroethane	<0.000121	50	0.0460	92	0.0450	90	68-127	2	20	mg/L	03/09/11 19:20	
1,1-Dichloroethene	<0.000139	50	0.0387	77	0.0349	70	59-172	10	22	mg/L	03/09/11 19:20	
Tetrachloroethylene	<0.0000977	50	0.0274	55	0.0264	53	71-125	4	20	mg/L	03/09/11 19:20	J
Trichloroethene	<0.000357	50	0.0372	74	0.0352	70	62-137	6	24	mg/L	03/09/11 19:20	
Vinyl Chloride	<0.000192	50	0.0482	96	0.0480	96	75-125	0	20	mg/L	03/09/11 19:20	

Analytical Method: Reactive Cyanide by EPA 9010
Seq Number: 846802 — Matrix: Soil
Parent Sample Id: 408682-002 — MD Sample Id: 408682-002 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide	<0.176	<0.176	NC	20	mg/kg	03/08/11 18:11	

Analytical Method: Soil pH by EPA 9045C
Seq Number: 846985 — Matrix: Sludge
Parent Sample Id: 408378-001 — MD Sample Id: 408378-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	5.21	5.18	1	20	SU	03/09/11 15:30	

Analytical Method: Soil pH by EPA 9045C
Seq Number: 846985 — Matrix: Soil
Parent Sample Id: 408751-002 — MD Sample Id: 408751-002 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	5.29	5.32	1	20	SU	03/09/11 15:30	

Analytical Method: Soil pH by EPA 9045C
Seq Number: 846985 — Matrix: Solid
Parent Sample Id: 408995-001 — MD Sample Id: 408995-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	7.81	7.83	0	20	SU	03/09/11 15:30	

City of Sunrise, Fort Lauderdale, FL

COC110302EOH01.xlsx

Analytical Method: Reactive Sulfide by SW 9030B
Seq Number: 846794 Matrix: Solid
MB Sample Id: 846794-1-BLK LCS Sample Id: 846794-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Sulfide	<50.0	100	92.0	92	60-120	mg/kg	03/08/11 17:15	

Analytical Method: Reactive Sulfide by SW 9030B
Seq Number: 846794 Matrix: Soil
Parent Sample Id: 408682-002 MD Sample Id: 408682-002 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Sulfide	<54.6	<54.6	NC	20	mg/kg	03/08/11 17:15	

CITY OF SUNRISE FLORIDA

CHAIN OF CUSTODY RECORD
for samples transported to Xenco

Log# 408371 T#S___ Quote:________ Page___of___

Container Type Codes

AV	Amber Vial	EB	Encore Sampler
CV	Clear Vial	PPV	Prepreserved vial
P	Plastic	PLC	Plastic container
AL	Amber Liter	PLJ	Plastic Jar
CL	Clear Liter	Ziploc	Ziploc bag
AP	Amber Plastic	TEDLAR B	Tedlar bag
AG	Amber Glass	WHIRLP	Whirl pak
SJ	Soil Jar	G	Gallon Jug

Other________
Size(s): 2oz, 4oz, 8oz, 16oz, 32oz or 1L, 40ml other____
Example: 4ozP = 4oz Plastic, 8ozSJ= 8oz Soil Jar

Matrix Codes

SD	Solid Waste	OL	Oil
GW	Ground Water	SL	Sludge
EFF	Effluent	SO	Soil Sediment
AFW	Analyte Free H2O	AQ	Aqueous
WW	Waste Water	NA	Non Aqueous
DW	Drinking Water	PE	Petroleum
SW	Surface Water	O	Other______

Pres/Codes

A. None	E. HCL	I. Ice
B. HNO3	F. MeOH	J. MCAA
C. H2SO4	G. Na2S2O3	K. Zn Acetate
D. NaOH	H. NaHSO4	O. Other

Company Name: City of Sunrise PO#
Address: 777 Sawgrass Corporate Parkway
City: Sunrise State: FL Zip: 33325
Attn: Ethan Jordan Fax# 954-846-7404
email: ejordan@cityofsunrise.org
FL ADAPT Project Name Project #: COC110302EOH01.xlsx
Sampler Signature: See City of Sunrise sample records Phone #. 954-888-6062

LAB ANALYSIS

City of Sunrise Sample ID	Bid Item	City of Sunrise ELF ADAPT LOC Code	Collect Date	Collect Time	Matrix		# of Containers	Parameters	Ph	Paint Filter Test	Full TCLP Scan	Reactive Cyanide	Reactive Sulfide	% solids	TCLP 8260(Volatile & Semi-Volatiles)		REMARKS
B11MISC0208		SPW INF Rag	03/02/11		sl		1		x	x	x	x	x	x			Test to be billed according to quote
B11MISC0209		SPW INF Rag	03/02/11		sl		1								x		#02242011NC01-20%.
B11MISC0210		SPW INF Grit	03/02/11		sl		1		x	x	x	x	x	x			For billing purposes, these represent
B11MISC0211		SPW INF Grit	03/02/11		sl		1								x		two samples. Bill per ADAPT LOC
																	Code and not per Sample ID.
																	5°C

TAT Required	Short Hold	QA/QC Report Level	COC OK	Initials	Coolers #s
Y/N / Date Required	Y___ N___	None___ 1___ 2___ 3___ Other___	Y N		

Item	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
	Marina Demling	City of Sunrise	3/2/11	11:30	[signature]	Xenco	3/2/11	11:30
	[signature]	Xenco	3/2/11	12:45	[signature]		3-2-11	12:45

Lab Use Only

	Yes	No	N/A
Sample INTACT upon arrival?			
Received on Wet Ice? Temp ___°C			
Proper Preservatives Indicated?			
Received within holding time?			
Custody seals intact?			
Volatile rec'd without headspace?			
Proper Containers Used?			

Xenco: 3231 NW 7 Ave, Boca Raton, FL 33431, Phone: 561-447-7373, Fax: 561-447-6136 Revision: Ethan Jordan 2010-01-01 C.O.C.#

XENCO LABORATORIES
Container Receipt Verification Form

Work Order Number: 408371 **Chain of Custody Number(s):** 1

Tests					pH, Flash Point, TCLP Reactivity, CN, Reactivity, Sulfide																TCLP 8260							
Container Type/ Pres.	gal GA/	32oz N/M GA/	32oz N/M GA/	32oz N/M GA/	32oz W/M GA/	VOA/	VOA/	VOA/	120mL P w. Pill/	4oz Plastic/	4oz Plastic/	250mL HDPE/	250mL HDPE/	500mL HDPE/	500mL HDPE/	500mL HDPE/	1L HDPE/	1L HDPE/	9oz GC/	9oz GC/	9oz GC/	4oz GC/	4oz GC/	2oz GC/	2oz GC/	Tedlar Bag	Ampules/	Other/	Comments
1					1																							
2					1																	1						
3					1																							
4																						1						
5																												
6																												
7																												
8																												
9																												
10																												

Abbreviations:
Gal GA = One gallon amber
32oz N/M GA = 32 oz Amberglass
VOA = 40mL vials
32oz W/M GA = 32 oz Wide Mouth Amberglass

1L HDPE = 1L (1000mL) Plastic Bottle
500mL HDPE = 500mL Plastic Bottle
250mL HPDE = 250mL Plastic Bottle

8oz GC = 8oz Soil Jar
4oz GC = 4oz Soil Jar
2oz GC = 2oz soil jar

120mL Plastic w. Pill = BacT
Zip = Ziplock Bag
4oz Plastic = 4oz Plastic Bottle

HCl = Hydrochloric Acid
H2SO4 = Sulfuric Acid
NaOH = Sodium Hydroxide
MeOH = Methanol
HNO3 = Nitric Acid
ZnAC = Zinc Acetate
Na2S2O3 = Sodium Thiosulfate

NH4Cl2 = Ammonium Chloride
DI H2O = DI Water
MCAA = Monochloroacetic Acid

Reviewed By: _____

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: City of Sunrise

Date/ Time Received: 03/02/2011 12:45:00 PM

Work Order #: 408371

Acceptable Temperature Range: 0 - 6 degC

Temperature Measuring device used : T-109

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles/ container?	N/A
#6 *Custody Seals Signed and dated for Containers/coolers	N/A
#7 *Chain of Custody present?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	OEH	PH Device/Lot#

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **DateTime :** _____

Checklist completed by: _____ Date: 03/02/2011
Roderick E. McHenry

Checklist reviewed by: _____ Date: 03/02/2011

BIOSOLIDS – SUNRISE 2

Analytical Report 408378

Ethan Jordan

DN: cn=Ethan Jordan, o=City of Sunrise, ou=Lab, email=ejordan@cityofsunrise.org, c=US
Date: 2011.03.15 13:33:40 -04'00'

for

City of Sunrise

Project Manager: Ethan Jordan

COC110302EOH03

NB

15-MAR-11

XENCO Laboratories
Florida Testing Services, LLC

Genapure Analytical Services, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

3231 NW 7th Avenue, Boca Raton, FL 33431
Ph:(561) 447-7373 Fax:(561) 447-6136

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

15-MAR-11

Project Manager: **Ethan Jordan**
City of Sunrise
777 Sawgrass Corporate Parkway
Fort Lauderdale, FL 33325

Reference: XENCO Report No: **408378**
COC110302EOH03
Project Address:

Ethan Jordan:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 408378. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 408378 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Terrence Anderson
Office Manager

Sample Cross Reference 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SOW INF Rag-B11MISC0216	S	Mar-02-11 00:00		408378-001
SOW INF Rag-B11MISC0217	S	Mar-02-11 00:00		408378-002

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: SOW INF Rag-B11MISC0216	**Matrix:** Sludge	**% Moisture:** 83.3
Lab Sample Id: 408378-001	**Date Collected:** Mar-02-11 00:00	**Basis:** Dry Weight
	Date Received: Mar-02-11 12:45	

Analytical Method: Reactive Sulfide by SW 9030B
Analyst: ARM
Tech: ARM
Seq Number: 846794

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Sulfide	105-05-2	U	299	40.1	mg/kg	03/08/11 17:15	U	10

Project: Florida Standard List of Methods

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: SOW INF Rag-B11MISC0216	**Matrix:** Sludge	**% Moisture:**
Lab Sample Id: 408378-001	**Date Collected:** Mar-02-11 00:00	**Basis:** Wet Weight
	Date Received: Mar-02-11 12:45	

Analytical Method: Total Solids by SM2540G
Analyst: ARM
Tech: ARM
Seq Number: 846104

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Total solids		167000			mg/kg	03/03/11 09:22		1

Analytical Method: Percent Moisture
Analyst: ARM
Tech: ARM
Seq Number: 846101

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Percent Moisture	TMOIST	83.3	1.00	1.00	%	03/03/11 09:41		1

Analytical Method: Reactive Cyanide by EPA 9010
Analyst: RGF
Tech: DAD
Seq Number: 846802

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Cyanide	57-12-5	U	2.00	0.176	mg/kg	03/08/11 18:23	U	10

Analytical Method: Soil pH by EPA 9045C
Analyst: KLH
Tech: KLH
Seq Number: 846985

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	5.2t			SU	03/09/11 15:30		1

Analytical Method: Paint Filter Liquids Test by SW-9095
Analyst: RGF
Tech: RGF
Seq Number: 847224

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Failed				03/10/11 03:00	U	1

Project: Florida Standard List of Methods

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: SOW INF Rag-B11M1SC0216 **Matrix:** Sludge **% Moisture:**
Lab Sample Id: 408378-001 **Date Collected:** Mar-02-11 00:00
Date Received: Mar-02-11 12:45

Analytical Method: TCLP Herbicides by SW-846 1311/8151A **Prep Method:** SW8151A_EXT
Analyst: LER **Date Prep:** Mar-07-11 19:50 **Tech:** MBA
Seq Number: 847320

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
2,4,5-TP (Silvex)	93-72-1	U	0.100	0.0246	mg/L	03/10/11 05:04	U	1
2,4-D	94-75-7	U	0.100	0.0203	mg/L	03/10/11 05:04	U	1

Analytical Method: TCLP Mercury by SW1311/7470A **Prep Method:** SW7470P
Analyst: SOA **Date Prep:** Mar-08-11 11:30 **Tech:** SOA
Seq Number: 846764

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	U	0.000200	0.0000593	mg/L	03/08/11 15:12	U	1

Analytical Method: TCLP Metals by SW846-1311/6010B **Prep Method:** SW3010A
Analyst: IST **Date Prep:** Mar-08-11 13:00 **Tech:** TEM
Seq Number: 847209

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	0.00964	0.0100	0.00450	mg/L	03/09/11 14:07	VI	1
Barium	7440-39-3	1.78	0.0100	0.00210	mg/L	03/09/11 14:07	V	1
Cadmium	7440-43-9	U	0.00500	0.00110	mg/L	03/09/11 14:07	U	1
Chromium	7440-47-3	U	0.00500	0.00260	mg/L	03/09/11 14:07	U	1
Lead	7439-92-1	U	0.0100	0.00470	mg/L	03/09/11 14:07	U	1
Selenium	7782-49-2	0.0564	0.0300	0.00670	mg/L	03/09/11 14:07	V	1
Silver	7440-22-4	U	0.0200	0.00540	mg/L	03/09/11 14:07	U	1

Analytical Method: TCLP SVOCs by SW846 8270C **Prep Method:** SW3510C
Analyst: BAT **Date Prep:** Mar-09-11 13:00 **Tech:** HEA
Seq Number: 847756

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,4-Dichlorobenzene	106-46-7	U	0.0200	0.00140	mg/L	03/12/11 06:36	U	1
2,4,5-Trichlorophenol	95-95-4	U	0.0200	0.00190	mg/L	03/12/11 06:36	U	1
2,4,6-Trichlorophenol	88-06-2	U	0.00500	0.00140	mg/L	03/12/11 06:36	U	1
2,4-Dinitrotoluene	121-14-2	U	0.00225	0.00160	mg/L	03/12/11 06:36	U	1
2-methylphenol	95-48-7	U	0.0200	0.00110	mg/L	03/12/11 06:36	U	1
3&4-Methylphenol		0.126	0.0200	0.00115	mg/L	03/12/11 06:36		1
Hexachlorobenzene	118-74-1	U	0.00500	0.00160	mg/L	03/12/11 06:36	U	1
Hexachlorobutadiene	87-68-3	U	0.0200	0.00230	mg/L	03/12/11 06:36	U	1
Hexachloroethane	67-72-1	U	0.0200	0.00180	mg/L	03/12/11 06:36	U	1
Nitrobenzene	98-95-3	U	0.0100	0.00160	mg/L	03/12/11 06:36	U	1
Pentachlorophenol	87-86-5	U	0.0500	0.00350	mg/L	03/12/11 06:36	U	1
Pyridine	110-86-1	U	0.0500	0.0445	mg/L	03/12/11 06:36	U	1

Project: Florida Standard List of Methods

Final 1.000

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: SOW INF Rag-B11MISC0216 **Matrix:** Sludge **% Moisture:**
Lab Sample Id: 408378-001 **Date Collected:** Mar-02-11 00:00
Date Received: Mar-02-11 12:45

Analytical Method: TCLP Pesticides by SW8081A **Prep Method:** SW3510C
Analyst: JGO **Date Prep:** Mar-09-11 10:00 **Tech:** HEE
Seq Number: 847143

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Heptachlor Epoxide	1024-57-3	U	0.00250	0.000167	mg/L	03/10/11 05:41	U	1
Chlordane	57-74-9	U	0.0500	0.00315	mg/L	03/10/11 05:41	U	1
Endrin	72-20-8	U	0.00500	0.000359	mg/L	03/10/11 05:41	U	1
Gamma-BHC (Lindane)	8-89-9	U	0.00250	0.000282	mg/L	03/10/11 05:41	U	1
Heptachlor	76-44-8	U	0.00250	0.000576	mg/L	03/10/11 05:41	U	1
Methoxychlor	72-43-5	U	0.00250	0.000730	mg/L	03/10/11 05:41	U	1
Toxaphene	8001-35-2	U	0.150	0.0236	mg/L	03/10/11 05:41	U	1

Analytical Method: TCLP VOAs by EPA 8260B **Prep Method:** SW5030B
Analyst: ROL **Date Prep:** Mar-09-11 08:00 **Tech:** VAJ
Seq Number: 846980

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	U	0.0500	0.0125	mg/L	03/09/11 18:08	U	50
2-Butanone	78-93-3	U	0.500	0.0843	mg/L	03/09/11 18:08	U	50
Carbon Tetrachloride	56-23-5	U	0.0500	0.0114	mg/L	03/09/11 18:08	U	50
Chlorobenzene	108-90-7	U	0.0500	0.00882	mg/L	03/09/11 18:08	U	50
Chloroform	67-66-3	U	0.0500	0.00609	mg/L	03/09/11 18:08	U	50
1,2-Dichloroethane	107-06-2	U	0.0500	0.00605	mg/L	03/09/11 18:08	U	50
1,1-Dichloroethene	75-35-4	U	0.0500	0.00694	mg/L	03/09/11 18:08	U	50
Tetrachloroethylene	127-18-4	U	0.0500	0.00489	mg/L	03/09/11 18:08	U	50
Trichloroethene	79-01-6	U	0.0500	0.0179	mg/L	03/09/11 18:08	U	50
Vinyl Chloride	75-01-4	U	0.0500	0.00960	mg/L	03/09/11 18:08	U	50

Project: Florida Standard List of Methods

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: SOW INF Rag-B11MISC0217 **Matrix:** Sludge **% Moisture:**
Lab Sample Id: 408378-002 **Date Collected:** Mar-02-11 00:00
Date Received: Mar-02-11 12:45

Analytical Method: TCLP SVOCs by SW846 8270C **Prep Method:** SW3510C
Analyst: BAT **Date Prep:** Mar-09-11 13:00 **Tech:** HEA
Seq Number: 847756

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,4-Dichlorobenzene	106-46-7	U	0.0200	0.00140	mg/L	03/12/11 06:54	U	1
2,4,5-Trichlorophenol	95-95-4	U	0.0200	0.00190	mg/L	03/12/11 06:54	U	1
2,4,6-Trichlorophenol	88-06-2	U	0.00500	0.00140	mg/L	03/12/11 06:54	U	1
2,4-Dinitrotoluene	121-14-2	U	0.00225	0.00160	mg/L	03/12/11 06:54	U	1
2-methylphenol	95-48-7	U	0.0200	0.00110	mg/L	03/12/11 06:54	U	1
3&4-Methylphenol		0.197	0.0200	0.00115	mg/L	03/12/11 06:54		1
Hexachlorobenzene	118-74-1	U	0.00500	0.00160	mg/L	03/12/11 06:54	U	1
Hexachlorobutadiene	87-68-3	U	0.0200	0.00230	mg/L	03/12/11 06:54	U	1
Hexachloroethane	67-72-1	U	0.0200	0.00180	mg/L	03/12/11 06:54	U	1
Nitrobenzene	98-95-3	U	0.0100	0.00160	mg/L	03/12/11 06:54	U	1
Pentachlorophenol	87-86-5	U	0.0500	0.00350	mg/L	03/12/11 06:54	U	1
Pyridine	110-86-1	U	0.0500	0.0445	mg/L	03/12/11 06:54	U	1

Analytical Method: TCLP VOAs by EPA 8260B **Prep Method:** SW5030B
Analyst: ROL **Date Prep:** Mar-09-11 08:00 **Tech:** VAJ
Seq Number: 846980

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	U	0.0500	0.0125	mg/L	03/09/11 18:32	U	50
2-Butanone	78-93-3	U	0.500	0.0843	mg/L	03/09/11 18:32	U	50
Carbon Tetrachloride	56-23-5	U	0.0500	0.0114	mg/L	03/09/11 18:32	U	50
Chlorobenzene	108-90-7	U	0.0500	0.00882	mg/L	03/09/11 18:32	U	50
Chloroform	67-66-3	U	0.0500	0.00609	mg/L	03/09/11 18:32	U	50
1,2-Dichloroethane	107-06-2	U	0.0500	0.00605	mg/L	03/09/11 18:32	U	50
1,1-Dichloroethene	75-35-4	U	0.0500	0.00694	mg/L	03/09/11 18:32	U	50
Tetrachloroethylene	127-18-4	U	0.0500	0.00489	mg/L	03/09/11 18:32	U	50
Trichloroethene	79-01-6	U	0.0500	0.0179	mg/L	03/09/11 18:32	U	50
Vinyl Chloride	75-01-4	U	0.0500	0.00960	mg/L	03/09/11 18:32	U	50

Project: Florida Standard List of Methods

FLORIDA Flagging Criteria

A Value reported is the mean (average) of two or more determinations. This code shall be used if the reported value is the average of results for two or more discrete and separate samples. These samples shall have been processed and analyzed independently. Do not use this code if the data are the result of replicate analysis on the same sample aliquot, extract or digestate.

B Results based upon colony counts outside the acceptable range. This code applies to microbiological tests and specifically to membrane filter colony counts. The code is to be used if the colony count is generated from a plate in which the total number of coliform colonies is outside the method indicated ideal range. This code is not to be used if a 100 mL sample has been filtered and the colony count is less than the lower value of the ideal range.

F When reporting species: F indicates the female sex. Otherwise it indicates RPD value is outside the acceptable range.

H Value based on field kit determination; results may not be accurate. This code shall be used if a field screening test (i.e., field gas chromatograph data, immunoassay, vendor-supplied field kit, etc.) was used to generate the value and the field kit or method has not been recognized by the Department as equivalent to laboratory methods.

I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

J Estimated value. A "J" value shall be accompanied by a narrative justification for its use. Where possible, the organization shall report whether the actual value is less than or greater than the reported value. A "J" value shall not be used as a substitute for K, L, M, T, V, or Y, however, if additional reasons exist for identifying the value as estimate (e.g., matrix spiked failed to meet acceptance criteria), the "J" code may be added to a K, L, M, T, V, or Y. The following are some examples of narrative descriptions that may accompany a "J" code: .

J1: No known quality control criteria exist for the component;

J2: The reported value failed to meet the established quality control criteria for either precision or accuracy (the specific failure must be identified);

J3: The sample matrix interfered with the ability to make any accurate determination;

J4: The data are questionable because of improper laboratory or field protocols (e.g., composite sample was collected instead of a grab sample).

J5: The field calibration verification did not meet calibration acceptance criteria.

J6: QC protocol not followed.

J7: B/A results for Chlorophyll does not meet 1 - 1.7 ratio.

K Off-scale low. Actual value is known to be less than the value given. This code shall be used if:

1. The value is less than the lowest calibration standard and the calibration curve is known to be non-linear; or
2. The value is known to be less than the reported value based on sample size, dilution. This code shall not be used to report values that are less than the laboratory practical quantitation limit or laboratory method detection limit.

L Off-scale high. Actual value is known to be greater than value given. To be used when the concentration of the analyte is above the acceptable level for quantitation (exceeds the linear range or highest calibration standard) and the calibration curve is known to exhibit a negative deflection.

M When reporting chemical analyses: presence of material is verified but not quantified; the actual value is less than the value given. The reported value shall be the laboratory practical quantitation limit. This code shall be used if the level is too low to permit accurate quantification, but the estimated concentration is greater than the method detection limit. If the value is less than the method detection limit use "T" below.

N Presumptive evidence of presence of material. This qualifier shall be used if:

1. The component has been tentatively identified based on mass spectral library search; or
2. There is an indication that the analyte is present, but quality control requirements for confirmation were not met (i.e., presence of analyte was not confirmed by alternative procedures).

O Sampled, but analysis lost or not performed.

Q Sample held beyond the accepted holding time. This code shall be used if the value is derived from a sample that was prepared or analyzed after the approved holding time restrictions for sample preparation or analysis.

T Value reported is less than the laboratory method detection limit. The value is reported for informational purposes, only and shall not be used in statistical analysis.

U Indicates that the compound was analyzed for but not detected. This symbolshall be used to indicate that the specified component was not detected. The value associated with the qualifier shall be the laboratory method detection limit. Unless requested by the client, less than the method detection limit values shall not be reported (see "T" above).

V Indicates that the analyte was detected in both the sample and the associated method blank. Note: the value in the blank shall not be subtracted from associated samples.

XENCO Laboratories

Flagging Criteria

Y The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.

Z Too many colonies were present for accurate counting. Historically, this condition has been reported as "too numerous to count" (TNTC). The "Z" qualifier code shall be reported when the total number of colonies of all types is more than 200 in all dilutions of the sample. When applicable to the observed test results, a numeric value for the colony count for the microorganism tested shall be estimated from the highest dilution factor (smallest sample volume) used for the test and reported with the qualifier code.

? Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.

* Not reported due to interference.

The following codes deal with certain aspects of field activities. The codes shall be used if the laboratory has knowledge of the specific sampling event. The codes shall be added by the organization collecting samples if they apply:

D The sample result was reported from a dilution.

E Indicates that extra samples were taken at composite stations.

R Significant rain in the past 48 hours. (Significant rain typically involves rain in excess of 1/2 inch within the past 48 hours.) This code shall be used when the rainfall might contribute to a lower than normal value.

! Data deviate from historically established concentration ranges.

+ Outside XENCO's scope of NELAC accreditation

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH03

Work Orders : 408378,

Project ID: NB

Lab Batch #: 847320 **Sample:** 597240-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/10/11 00:25

TCLP Herbicides by SW-846 1311/8151A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2,4-Dichlorophenylacetic Acid	355	500	71	46-142	

Lab Batch #: 847320 **Sample:** 597240-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/10/11 00:56

TCLP Herbicides by SW-846 1311/8151A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2,4-Dichlorophenylacetic Acid	670.000	500	134	46-142	

Lab Batch #: 847320 **Sample:** 408371-001 S / MS **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 01:27

TCLP Herbicides by SW-846 1311/8151A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2,4-Dichlorophenylacetic Acid	635.000	500	127	46-142	

Lab Batch #: 847320 **Sample:** 408371-001 SD / MSD **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 01:58

TCLP Herbicides by SW-846 1311/8151A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2,4-Dichlorophenylacetic Acid	535.000	500	107	46-142	

Lab Batch #: 847320 **Sample:** 408378-001 / SMP **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 05:04

TCLP Herbicides by SW-846 1311/8151A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2,4-Dichlorophenylacetic Acid	460	500	92	46-142	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH03

Work Orders : 408378,

Project ID: NB

Lab Batch #: 847143 **Sample:** 597239-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/10/11 00:03

TCLP Pesticides by SW8081A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Decachlorobiphenyl	71.7	100	72	11-170	
Tetrachloro-m-xylene	68.1	100	68	15-157	

Lab Batch #: 847143 **Sample:** 597239-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/10/11 01:03

TCLP Pesticides by SW8081A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Decachlorobiphenyl	61.000	100	61	11-170	
Tetrachloro-m-xylene	63.100	100	63	15-157	

Lab Batch #: 847143 **Sample:** 408368-001 S / MS **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 02:22

TCLP Pesticides by SW8081A Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Decachlorobiphenyl	37.000	100	37	11-170	
Tetrachloro-m-xylene	54.700	100	55	15-157	

Lab Batch #: 847143 **Sample:** 408368-001 SD / MSD **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 02:42

TCLP Pesticides by SW8081A Analytes	SURROGATE RECOVERY STUDY Amount Fonnd [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Decachlorobiphenyl	48.400	100	48	11-170	
Tetrachloro-m-xylene	62.300	100	62	15-157	

Lab Batch #: 847143 **Sample:** 408378-001 / SMP **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/10/11 05:41

TCLP Pesticides by SW8081A Analytes	SURROGATE RECOVERY STUDY Amonnt Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Decachlorobiphenyl	53.3	100	53	11-170	
Tetrachloro-m-xylene	69.6	100	70	15-157	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH03

Work Orders : 408378,

Project ID: NB

Lab Batch #: 847756 **Sample:** 597227-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/12/11 02:30

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.142	0.250	57	19-126	
2-Fluorophenol	0.192	0.500	38	28-62	
Nitrobenzene-d5	0.164	0.250	66	10-130	
Phenol-d6	0.119	0.500	24	10-59	
Terphenyl-D14	0.221	0.250	88	27-133	
2,4,6-Tribromophenol	0.384	0.500	77	48-132	

Lab Batch #: 847756 **Sample:** 597227-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/12/11 02:48

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.148	0.250	59	19-126	
2-Fluorophenol	0.181	0.500	36	28-62	
Nitrobenzene-d5	0.171	0.250	68	10-130	
Phenol-d6	0.114	0.500	23	10-59	
Terphenyl-D14	0.203	0.250	81	27-133	
2,4,6-Tribromophenol	0.368	0.500	74	48-132	

Lab Batch #: 847756 **Sample:** 408366-001 S / MS **Batch:** 1 **Matrix:** Sludge

Units: mg/L **Date Analyzed:** 03/12/11 03:06

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.148	0.250	59	19-126	
2-Fluorophenol	0.179	0.500	36	28-62	
Nitrobenzene-d5	0.155	0.250	62	10-130	
Phenol-d6	0.108	0.500	22	10-59	
Terphenyl-D14	0.180	0.250	72	27-133	
2,4,6-Tribromophenol	0.381	0.500	76	48-132	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH03

Work Orders : 408378,

Project ID: NB

Lab Batch #: 847756 **Sample:** 408366-001 SD / MSD **Batch:** 1 **Matrix:** Sludge

Units: mg/L **Date Analyzed:** 03/12/11 03:23

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.156	0.250	62	19-126	
2-Fluorophenol	0.187	0.500	37	28-62	
Nitrobenzene-d5	0.165	0.250	66	10-130	
Phenol-d6	0.110	0.500	22	10-59	
Terphenyl-D14	0.202	0.250	81	27-133	
2,4,6-Tribromophenol	0.414	0.500	83	48-132	

Lab Batch #: 847756 **Sample:** 408378-001 / SMP **Batch:** 1 **Matrix:** Sludge

Units: mg/L **Date Analyzed:** 03/12/11 06:36

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.152	0.250	61	19-126	
2-Fluorophenol	0.180	0.500	36	28-62	
Nitrobenzene-d5	0.164	0.250	66	10-130	
Phenol-d6	0.100	0.500	20	10-59	
Terphenyl-D14	0.194	0.250	78	27-133	
2,4,6-Tribromophenol	0.425	0.500	85	48-132	

Lab Batch #: 847756 **Sample:** 408378-002 / SMP **Batch:** 1 **Matrix:** Sludge

Units: mg/L **Date Analyzed:** 03/12/11 06:54

TCLP SVOCs by SW846 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.165	0.250	66	19-126	
2-Fluorophenol	0.205	0.500	41	28-62	
Nitrobenzene-d5	0.190	0.250	76	10-130	
Phenol-d6	0.117	0.500	23	10-59	
Terphenyl-D14	0.213	0.250	85	27-133	
2,4,6-Tribromophenol	0.471	0.500	94	48-132	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH03

Work Orders : 408378,

Project ID: NB

Lab Batch #: 846980 **Sample:** 597548-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/09/11 11:34

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28	30	93	83-118	
Dibromofluoromethane	32	30	107	76-133	
Toluene-D8	30	30	100	86-108	

Lab Batch #: 846980 **Sample:** 597548-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 03/09/11 12:52

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29	30	97	83-118	
Dibromofluoromethane	31	30	103	76-133	
Toluene-D8	30	30	100	86-108	

Lab Batch #: 846980 **Sample:** 408378-001 / SMP **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/09/11 18:08

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29	30	97	83-118	
Dibromofluoromethane	33	30	110	76-133	
Toluene-D8	31	30	103	86-108	

Lab Batch #: 846980 **Sample:** 408378-002 / SMP **Batch:** 1 **Matrix:** Sludge

Units: ug/L **Date Analyzed:** 03/09/11 18:32

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29	30	97	83-118	
Dibromofluoromethane	33	30	110	76-133	
Toluene-D8	31	30	103	86-108	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: COC110302EOH03

Work Orders : 408378,

Project ID: NB

Lab Batch #: 846980 **Sample:** 408404-001 S / MS **Batch:** 1 **Matrix:** Solid

Units: ug/L **Date Analyzed:** 03/09/11 19:20

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27	30	90	83-118	
Dibromofluoromethane	32	30	107	76-133	
Toluene-D8	30	30	100	86-108	

Lab Batch #: 846980 **Sample:** 408404-001 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: ug/L **Date Analyzed:** 03/09/11 19:44

TCLP VOAs by EPA 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29	30	97	83-118	
Dibromofluoromethane	31	30	103	76-133	
Toluene-D8	30	30	100	86-108	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes

XENCO Laboratories

Blank Summary 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: **597113-1-BLK** Matrix: **WATER**
Lab Sample Id: **597113-1-BLK**

Analytical Method: TCLP Metals by SW846-1311/6010B Prep Method: SW3010A

Date Analyzed: Mar-09-11 13:10 Analyst: IST Date Prep: Mar-08-11 13:00 Tech: TEM
Seq Number: 847209

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Arsenic	7440-38-2	0.0145	0.0100	0.00450	mg/L	V	1
Barium	7440-39-3	0.0375	0.0100	0.00210	mg/L	V	1
Cadmium	7440-43-9	U	0.00500	0.00110	mg/L	U	1
Chromium	7440-47-3	U	0.00500	0.00260	mg/L	U	1
Lead	7439-92-1	U	0.0100	0.00470	mg/L	U	1
Selenium	7782-49-2	0.0146	0.0300	0.00670	mg/L	VJ	1
Silver	7440-22-4	U	0.0200	0.00540	mg/L	U	1

Project: Florida Standard List of Methods

Version: 1.024

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: **597227-1-BLK** Matrix: **WATER**
Lab Sample Id: **597227-1-BLK**

Analytical Method: TCLP SVOCs by SW846 8270C Prep Method: SW3510C

Date Analyzed: Mar-12-11 02:30 Analyst: BAT Date Prep: Mar-09-11 13:00 Tech: HEA
Seq Number: 847756

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
1,4-Dichlorobenzene	106-46-7	U	0.0200	0.00140	mg/L	U	1
2,4,5-Trichlorophenol	95-95-4	U	0.0200	0.00190	mg/L	U	1
2,4,6-Trichlorophenol	88-06-2	U	0.00500	0.00140	mg/L	U	1
2,4-Dinitrotoluene	121-14-2	U	0.00225	0.00160	mg/L	U	1
2-methylphenol	95-48-7	U	0.0200	0.00110	mg/L	U	1
3&4-Methylphenol		U	0.0200	0.00115	mg/L	U	1
Hexachlorobenzene	118-74-1	U	0.00500	0.00160	mg/L	U	1
Hexachlorobutadiene	87-68-3	U	0.0200	0.00230	mg/L	U	1
Hexachloroethane	67-72-1	U	0.0200	0.00180	mg/L	U	1
Nitrobenzene	98-95-3	U	0.0100	0.00160	mg/L	U	1
Pentachlorophenol	87-86-5	U	0.0500	0.00350	mg/L	U	1
Pyridine	110-86-1	U	0.0500	0.0445	mg/L	U	1

XENCO Laboratories

Blank Summary 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: **597239-1-BLK** Matrix: **WATER**

Lab Sample Id: **597239-1-BLK**

Analytical Method: TCLP Pesticides by SW8081A Prep Method: SW3510C

Date Analyzed: Mar-10-11 00:03 Analyst: JGO Date Prep: Mar-09-11 10:00 Tech: HEE

Seq Number: 847143

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Heptachlor Epoxide	1024-57-3	U	0.00250	0.000167	mg/L	U	1
Chlordane	57-74-9	U	0.0500	0.00315	mg/L	U	1
Endrin	72-20-8	U	0.00500	0.000359	mg/L	U	1
Gamma-BHC (Lindane)	8-89-9	U	0.00250	0.000282	mg/L	U	1
Heptachlor	76-44-8	U	0.00250	0.000576	mg/L	U	1
Methoxychlor	72-43-5	U	0.00250	0.000730	mg/L	U	1
Toxaphene	8001-35-2	U	0.150	0.0236	mg/L	U	1

Project: Florida Standard List of Methods

XENCO Laboratories

Blank Summary 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: **597240-1-BLK** Matrix: **WATER**
Lab Sample Id: **597240-1-BLK**

Analytical Method: TCLP Herbicides by SW-846 1311/8151A Prep Method: SW8151A_EXT

Date Analyzed: Mar-10-11 00:25 Analyst: LER Date Prep: Mar-07-11 19:50 Tech: MBA
Seq Number: 847320

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
2,4,5-TP (Silvex)	93-72-1	U	0.100	0.0246	mg/L	U	1
2,4-D	94-75-7	U	0.100	0.0203	mg/L	U	1

Project: Florida Standard List of Methods

Version: 1.024

XENCO Laboratories

Blank Summary 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: **597411-1-BLK** Matrix: **WATER**
Lab Sample Id: **597411-1-BLK**

Analytical Method: TCLP Mercury by SW1311/7470A Prep Method: SW7470P

Date Analyzed: Mar-08-11 14:38 Analyst: SOA Date Prep: Mar-08-11 11:30 Tech: SOA
Seq Number: 846764

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Mercury	7439-97-6	U	0.000200	0.0000593	mg/L	U	1

XENCO Laboratories

Blank Summary 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: **597548-1-BLK** Matrix: **WATER**

Lab Sample Id: **597548-1-BLK**

Analytical Method: TCLP VOAs by EPA 8260B Prep Method: SW5030B

Date Analyzed: Mar-09-11 12:52 Analyst: ROL Date Prep: Mar-09-11 08:00 Tech: VAJ

Seq Number: 846980

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Benzene	71-43-2	U	0.0500	0.0125	mg/L	U	50
2-Butanone	78-93-3	U	0.500	0.0843	mg/L	U	50
Carbon Tetrachloride	56-23-5	U	0.0500	0.0114	mg/L	U	50
Chlorobenzene	108-90-7	U	0.0500	0.00882	mg/L	U	50
Chloroform	67-66-3	U	0.0500	0.00609	mg/L	U	50
1,2-Dichloroethane	107-06-2	U	0.0500	0.00605	mg/L	U	50
1,1-Dichloroethene	75-35-4	U	0.0500	0.00694	mg/L	U	50
Tetrachloroethylene	127-18-4	U	0.0500	0.00489	mg/L	U	50
Trichloroethene	79-01-6	U	0.0500	0.0179	mg/L	U	50
Vinyl Chloride	75-01-4	U	0.0500	0.00960	mg/L	U	50

XENCO Laboratories

Blank Summary 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: **846101-1-BLK** Matrix: **SOLID**
Lab Sample Id: **846101-1-BLK**

Analytical Method: Percent Moisture Prep Method:

Date Analyzed: Mar-03-11 09:41 Analyst: ARM Date Prep: Tech: ARM
Seq Number: 846101

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Percent Moisture	TMOIST	U	1.00	1.00	%	U	1

Project: Florida Standard List of Methods

Version: 1.024

Final 1.000

XENCO Laboratories

Blank Summary 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: **846104-1-BLK** Matrix: **SOLID**
Lab Sample Id: **846104-1-BLK**

Analytical Method: Total Solids by SM2540G Prep Method:

Date Analyzed: Mar-03-11 09:22 Analyst: ARM Date Prep: Tech: ARM
Seq Number: 846104

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Total solids		U			mg/kg	U	1

Project: Florida Standard List of Methods

Version: 1.024

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: **846794-1-BLK** Matrix: **SOLID**
Lab Sample Id: **846794-1-BLK**

Analytical Method: Reactive Sulfide by SW 9030B Prep Method:

Date Analyzed: Mar-08-11 17:15 Analyst: ARM Date Prep: Tech: ARM
Seq Number: 846794

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Sulfide	105-05-2	U	500	50.0	mg/kg	U	10

Project: Florida Standard List of Methods

Version: 1.024

XENCO Laboratories

Blank Summary 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: **846802-1-BLK** Matrix: **SOLID**
Lab Sample Id: **846802-1-BLK**

Analytical Method: Reactive Cyanide by EPA 9010 Prep Method:

Date Analyzed: Mar-08-11 18:08 Analyst: RGF Date Prep: Tech: DAD
Seq Number: 846802

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Cyanide	57-12-5	U	2.00	0.176	mg/kg	U	10

Project: Florida Standard List of Methods

Version: 1.024

XENCO Laboratories

Blank Summary 408378

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Sample Id: **847224-1-BLK** Matrix: **SOLID**
Lab Sample Id: **847224-1-BLK**

Analytical Method: Paint Filter Liquids Test by SW-9095 Prep Method:

Date Analyzed: Mar-10-11 03:00 Analyst: RGF Date Prep: Tech: RGF
Seq Number: 847224

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Paint Filter	PAIFILTER	Pass				U	1

Project: Florida Standard List of Methods

Version: 1.024

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Analytical Method: TCLP Herbicides by SW-846 1311/8151A — Prep Method: SW8151A_EXT
Seq Number: 847320 — Matrix: Water — Date Prep: 03/07/2011
MB Sample Id: 597240-1-BLK — LCS Sample Id: 597240-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
2,4,5-TP (Silvex)	<0.0246	250	0.345	138	35-160	mg/L	03/10/11 00:56	
2,4-D	<0.0203	250	0.250	100	25-166	mg/L	03/10/11 00:56	

Analytical Method: TCLP Herbicides by SW-846 1311/8151A — Prep Method: SW8151A_EXT
Seq Number: 847320 — Matrix: Sludge — Date Prep: 03/07/2011
Parent Sample Id: 408371-001 — MS Sample Id: 408371-001 S — MSD Sample Id: 408371-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
2,4,5-TP (Silvex)	<0.0246	0.25	0.330	132	0.280	112	35-160	16	20	mg/L	03/10/11 01:27	
2,4-D	<0.0203	0.25	0.245	98	0.210	84	25-166	15	20	mg/L	03/10/11 01:27	

Analytical Method: TCLP Mercury by SW1311/7470A — Prep Method: SW7470P
Seq Number: 846764 — Matrix: Water — Date Prep: 03/08/2011
MB Sample Id: 597411-1-BLK — LCS Sample Id: 597411-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Mercury	<0.0000593	2	0.00217	109	75-125	mg/L	03/08/11 14:40	

Analytical Method: TCLP Mercury by SW1311/7470A — Prep Method: SW7470P
Seq Number: 846764 — Matrix: Solid — Date Prep: 03/08/2011
Parent Sample Id: 408651-001 — MS Sample Id: 408651-001 S — MSD Sample Id: 408651-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0000930	0.002	0.00219	105	0.00221	106	75-125	1	20	mg/L	03/08/11 14:42	

Analytical Method: TCLP Metals by SW846-1311/6010B — Prep Method: SW3010A
Seq Number: 847209 — Matrix: Water — Date Prep: 03/08/2011
MB Sample Id: 597113-1-BLK — LCS Sample Id: 597113-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Arsenic	0.0145	1000	1.04	104	75-125	mg/L	03/09/11 13:17	
Barium	0.0375	1000	0.968	97	75-125	mg/L	03/09/11 13:17	
Cadmium	<0.00110	1000	0.992	99	75-125	mg/L	03/09/11 13:17	
Chromium	<0.00260	1000	0.977	98	0-125	mg/L	03/09/11 13:17	
Lead	<0.00470	1000	0.963	96	75-125	mg/L	03/09/11 13:17	
Selenium	0.0146	1000	1.08	108	75-125	mg/L	03/09/11 13:17	
Silver	<0.00540	500	0.574	115	75-125	mg/L	03/09/11 13:17	

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Analytical Method: TCLP Metals by SW846-1311/6010B — Prep Method: SW3010A
Seq Number: 847209 — Matrix: Sludge — Date Prep: 03/08/2011
Parent Sample Id: 408366-001 — MS Sample Id: 408366-001 S — MSD Sample Id: 408366-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	0.00927	1	1.02	101	0.994	98	75-125	3	20	mg/L	03/09/11 13:29	
Barium	0.0528	1	1.01	96	0.987	93	75-125	2	20	mg/L	03/09/11 13:29	
Cadmium	<0.00110	1	0.971	97	0.950	95	75-125	2	20	mg/L	03/09/11 13:29	
Chromium	<0.00260	1	0.955	96	0.934	93	0-125	2	20	mg/L	03/09/11 13:29	
Lead	<0.00470	1	0.940	94	0.928	93	75-125	1	20	mg/L	03/09/11 13:29	
Selenium	0.0270	1	1.06	103	1.04	101	75-125	2	20	mg/L	03/09/11 13:29	
Silver	<0.00540	0.5	0.557	111	0.557	111	75-125	0	20	mg/L	03/09/11 13:29	

Analytical Method: TCLP SVOCs by SW846 8270C — Prep Method: SW3510C
Seq Number: 847756 — Matrix: Water — Date Prep: 03/09/2011
MB Sample Id: 597227-1-BLK — LCS Sample Id: 597227-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
1,4-Dichlorobenzene	<0.00140	0.25	0.116	46	30-116	mg/L	03/12/11 02:48	
2,4,5-Trichlorophenol	<0.00190	0.25	0.176	70	45-127	mg/L	03/12/11 02:48	
2,4,6-Trichlorophenol	<0.00140	0.25	0.191	76	49-131	mg/L	03/12/11 02:48	
2,4-Dinitrotoluene	<0.00160	0.25	0.163	65	37-138	mg/L	03/12/11 02:48	
2-methylphenol	<0.00110	0.25	0.163	65	28-102	mg/L	03/12/11 02:48	
3&4-Methylphenol	<0.00115	0.5	0.245	49	24-76	mg/L	03/12/11 02:48	
Hexachlorobenzene	<0.00160	0.25	0.210	84	63-131	mg/L	03/12/11 02:48	
Hexachlorobutadiene	<0.00230	0.25	0.119	48	28-121	mg/L	03/12/11 02:48	
Hexachloroethane	<0.00180	0.25	0.108	43	18-131	mg/L	03/12/11 02:48	
Nitrobenzene	<0.00160	0.25	0.179	72	44-132	mg/L	03/12/11 02:48	
Pentachlorophenol	<0.00350	0.25	0.192	77	16-150	mg/L	03/12/11 02:48	
Pyridine	<0.0445	0.25	0.0615	25	10-77	mg/L	03/12/11 02:48	

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Analytical Method: TCLP SVOCs by SW846 8270C — Prep Method: SW3510C
Seq Number: 847756 — Matrix: Sludge — Date Prep: 03/09/2011
Parent Sample Id: 408366-001 — MS Sample Id: 408366-001 S — MSD Sample Id: 408366-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,4-Dichlorobenzene	<0.00140	0.25	0.127	51	0.125	50	30-116	2	20	mg/L	03/12/11 03:06	
2,4,5-Trichlorophenol	<0.00190	0.25	0.200	80	0.207	83	45-127	3	20	mg/L	03/12/11 03:06	
2,4,6-Trichlorophenol	<0.00140	0.25	0.202	81	0.206	82	49-131	2	20	mg/L	03/12/11 03:06	
2,4-Dinitrotoluene	<0.00160	0.25	0.166	66	0.176	70	37-138	6	20	mg/L	03/12/11 03:06	
2-methylphenol	<0.00110	0.25	0.156	62	0.151	60	28-102	3	20	mg/L	03/12/11 03:06	
3&4-Methylphenol	0.0919	0.5	0.351	52	0.342	50	24-76	3	20	mg/L	03/12/11 03:06	
Hexachlorobenzene	<0.00160	0.25	0.204	82	0.198	79	63-131	3	20	mg/L	03/12/11 03:06	
Hexachlorobutadiene	<0.00230	0.25	0.145	58	0.136	54	28-121	6	20	mg/L	03/12/11 03:06	
Hexachloroethane	<0.00180	0.25	0.126	50	0.127	51	18-131	1	20	mg/L	03/12/11 03:06	
Nitrobenzene	<0.00160	0.25	0.177	71	0.170	68	44-132	4	20	mg/L	03/12/11 03:06	
Pentachlorophenol	<0.00350	0.25	0.238	95	0.236	94	16-150	1	20	mg/L	03/12/11 03:06	
Pyridine	<0.0445	0.25	0.0728	29	0.0777	31	10-77	7	20	mg/L	03/12/11 03:06	

Analytical Method: Total Solids by SM2540G
Seq Number: 846104 — Matrix: Sludge
Parent Sample Id: 408399-001 — MD Sample Id: 408399-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Total solids	356000	354000	1	20	mg/kg	03/03/11 09:22	

Analytical Method: Percent Moisture
Seq Number: 846101 — Matrix: Sludge
Parent Sample Id: 408399-001 — MD Sample Id: 408399-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	64.6	64.4	0	20	%	03/03/11 09:41	

Analytical Method: Percent Moisture
Seq Number: 846101 — Matrix: Soil
Parent Sample Id: 408330-006 — MD Sample Id: 408330-006 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	16.3	16.0	2	20	%	03/03/11 09:41	

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Analytical Method: TCLP Pesticides by SW8081A — Prep Method: SW3510C
Seq Number: 847143 — Matrix: Water — Date Prep: 03/09/2011
MB Sample Id: 597239-1-BLK — LCS Sample Id: 597239-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Endrin	<0.000359	5	0.004	80	t0-t70	mg/L	03/10/1 101:03	
Gamma-BHC (Lindane)	<0.000282	5	0.004	80	t0-t50	mg/L	03/10/1 101:03	
Heptachlor	<0.000576	5	0.003	60	tt-t4t	mg/L	03/10/1 101:03	

Analytical Method: TCLP Pesticides by SW8081A — Prep Method: SW3510C
Seq Number: 847143 — Matrix: Sludge — Date Prep: 03/09/2011
Parent Sample Id: 408368-001 — MS Sample Id: 408368-001 S — MSD Sample Id: 408368-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Endrin	<0.000359	0.005	0.003	60	0.004	80	t0-t70	29	20	mg/L	03/10/1 102:22	J
Gamma-BHC (Lindane)	<0.000282	0.005	0.003	60	0.004	80	t0-t50	29	20	mg/L	03/10/1 102:22	J
Heptachlor	<0.000576	0.005	0.003	60	0.003	60	tt-t4t	0	20	mg/L	03/10/1 102:22	

Analytical Method: TCLP VOAs by EPA 8260B — Prep Method: SW5030B
Seq Number: 846980 — Matrix: Water — Date Prep: 03/09/2011
MB Sample Id: 597548-1-BLK — LCS Sample Id: 597548-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.0t25	2500	2.23	89	66-t42	mg/L	03/09/1 11:34	
2-Butanone	<0.0843	2500	3.0t	t20	75-t25	mg/L	03/09/1 11:34	
Carbon Tetrachloride	<0.0tt4	2500	2.t3	85	62-t25	mg/L	03/09/1 11:34	
Chlorobenzene	<0.00882	2500	2.29	92	60-t33	mg/L	03/09/1 11:34	
Chloroform	<0.00609	2500	2.28	9t	74-t25	mg/L	03/09/1 11:34	
1,2-Dichloroethane	<0.00605	2500	2.48	99	68-127	mg/L	03/09/1 11:34	
t,t-Dichloroethene	<0.00694	2500	t.99	80	59-t72	mg/L	03/09/1 11:34	
Tetrachloroethylene	<0.00489	2500	2.08	83	7t-t25	mg/L	03/09/1 11:34	
Trichloroethene	<0.0179	2500	2.22	89	62-t37	mg/L	03/09/1 11:34	
Vinyl Chloride	<0.00960	2500	2.57	t03	75-125	mg/L	03/09/1 11:34	

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Analytical Method: TCLP VOAs by EPA 8260B — *Prep Method:* SW5030B
Seq Number: 846980 — Matrix: Solid — Date Prep: 03/09/2011
Parent Sample Id: 408404-001 — MS Sample Id: 408404-001 S — MSD Sample Id: 408404-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0125	2.5	1.94	78	1.84	74	66-142	5	21	mg/L	03/09/11 19:20	
2-Butanone	<0.0843	2500	2.46	98	2.46	98	75-125	0	20	mg/L	03/09/11 19:20	
Carbon Tetrachloride	<0.000228	50	0.0370	74	0.0357	71	62-125	4	20	mg/L	03/09/11 19:20	
Chlorobenzene	<0.000176	50	0.0326	65	0.0309	62	60-133	5	21	mg/L	03/09/11 19:20	
Chloroform	<0.000122	50	0.0422	84	0.0397	79	74-125	6	20	mg/L	03/09/11 19:20	
1,2-Dichloroethane	<0.000121	50	0.0460	92	0.0450	90	68-127	2	20	mg/L	03/09/11 19:20	
1,1-Dichloroethene	<0.000139	50	0.0387	77	0.0349	70	59-172	10	22	mg/L	03/09/11 19:20	
Tetrachloroethylene	<0.0000977	50	0.0274	55	0.0264	53	71-125	4	20	mg/L	03/09/11 19:20	J
Trichloroethene	<0.000357	50	0.0372	74	0.0352	70	62-137	6	24	mg/L	03/09/11 19:20	
Vinyl Chloride	<0.000192	50	0.0482	96	0.0480	96	75-125	0	20	mg/L	03/09/11 19:20	

Analytical Method: Reactive Cyanide by EPA 9010
Seq Number: 846802 — Matrix: Soil
Parent Sample Id: 408682-002 — MD Sample Id: 408682-002 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide	<0.176	<0.176	NC	20	mg/kg	03/08/11 18:11	

Analytical Method: Soil pH by EPA 9045C
Seq Number: 846985 — Matrix: Sludge
Parent Sample Id: 408378-001 — MD Sample Id: 408378-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	5.21	5.18	1	20	SU	03/09/11 15:30	

Analytical Method: Soil pH by EPA 9045C
Seq Number: 846985 — Matrix: Soil
Parent Sample Id: 408751-002 — MD Sample Id: 408751-002 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	5.29	5.32	1	20	SU	03/09/11 15:30	

Analytical Method: Soil pH by EPA 9045C
Seq Number: 846985 — Matrix: Solid
Parent Sample Id: 408995-001 — MD Sample Id: 408995-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	7.81	7.83	0	20	SU	03/09/11 15:30	

City of Sunrise, Fort Lauderdale, FL

COC110302EOH03

Analytical Method: Reactive Sulfide by SW 9030B
Seq Number: 846794 Matrix: Solid
MB Sample Id: 846794-1-BLK LCS Sample Id: 846794-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Sulfide	<50.0	100	92.0	92	60-120	mg/kg	03/08/11 17:15	

Analytical Method: Reactive Sulfide by SW 9030B
Seq Number: 846794 Matrix: Soil
Parent Sample Id: 408682-002 MD Sample Id: 408682-002 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Sulfide	<54.6	<54.6	NC	20	mg/kg	03/08/11 17:15	

CHAIN OF CUSTODY RECORD
for samples transported to Xenco

CITY OF SUNRISE FLORIDA

Log# 408378 T#S___ Quote:________ Page___of___

Company Name City of Sunrise	PO#
Address: 777 Sawgrass Corporate Parkway	
City: Sunrise State: FL Zip 33325	
Attn Ethan Jordan	Fax# 954-846-7404
email ejordan@cityofsunrise.org	
FL ADAPT Project Name	Project # COC110302EOH03.xlsx
Sampler Signature See City of Sunrise sample records	Phone #: 954-888-6062

LAB ANALYSIS

City of Sunrise Sample ID	Item	City of Sunrise ADAPT Loc Code	Date	Time	Matrix	Pres	# of Cont.	pH	Paint Filter Test	Full TCLP Scan	Reactive Cyanide	Reactive Sulfide	% solids	TCLP 8260(Volatile & Semi-Volatiles)	Remarks
B11MISC0216		SOW INF Rag	03/02/11		sl		1	x	x	x	x	x	x		Tests to be billed according to quote
B11MISC0217		SOW INF Rag	03/02/11		sl		1							x	# 02242011NC01-20%.
															For billing purposes, these represent
															two samples. Bill per ADAPT LOC
															Code and not per Sample ID.
															5°C

Rush: Y/N ___ Date Required ___ Short Hold: Y___ N___ QA/QC Report Level: None___ 1___ 2___ 3___ Other___ COC OK: Y N Initials

Item	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
	[signature]	City of Sunrise	3/2/11	1130	[signature]	Xenco	3/2/11	11:30
	[signature]	Xenco	3/2/11	1245	[signature]		3-2-11	12:45

Container Type Codes

AV Amber Vial; CV Clear Vial; P Plastic; AL Amber Liter; CL Clear Liter; AP Amber Plastic; AG Amber Glass; SJ Soil Jar; Other; ES Encore Sampler; PPV Prepreserved vial; PLC Plastic container; PLJ Plastic Jar; Ziploc Ziploc bag; TEDLAR B Tedlar bag; WHRLP Whirl pak; G Gallon Jug

Size(s): 2oz, 4oz, 8oz, 16oz, 32oz or 1L, 40ml other____
Example: 4ozP = 4oz Plastic, 8ozSJ= 8oz Soil Jar

Matrix Codes

SD Solid Waste; GW Ground Water; EFF Effluent; AFW Analyte Free H2O; WW Waste Water; DW Drinking Water; SW Surface Water; OL Oil; SL Sludge; SO Soil Sediment; AQ Aqueous; NA Non Aqueous; PE Petroleum; O Other____

Pres Codes

A. None; B. HNO_3; C. H_2SO_4; D. NaOH; E. HCL; F. MeOH; G. $Na_2S_2O_3$; H. $NaHSO_4$; I. Ice; J. MCAA; K. Zn Acetate; O. Other

Lab Use Only (Yes / No / N/A)

- Sample INTACT upon arrival?
- Received on Wet Ice? Temp ___°C
- Proper Preservatives Indicated?
- Received within holding time?
- Custody seals intact?
- Volatile rec'd without headspace?
- Proper Containers Used?

C.O.C.#

Xenco: 3231 NW 7 Ave, Boca Raton, FL 33431, Phone: 561-447-7373, Fax: 561-447-6136 Revision: Ethan Jordan 2010-01-01

XENCO LABORATORIES
Container Receipt Verification Form

Work Order Number: 408378 **Chain of Custody Number(s):** 1

Container Type/ Pres.	gal GA/	32oz N/M GA/	32oz N/M GA/	32oz N/M GA/	32oz W/M GA/ cool	VOA/	VOA/	VOA/	120mL P w. Pill/	4oz Plastic/	4oz Plastic/	250mL HDPE/	250mL HDPE/	500mL HDPE/	500mL HDPE/	500mL HDPE/	1L HDPE/	1L HDPE/	9oz GC/	9oz GC/	9oz GC/	4oz GC/ cool	4oz GC/	2oz GC/	2oz GC/	Tedlar Bag	Ampules/	Other/	Comments
Tests					pH, paint filter, TCLP, Reactive CN, Reactive Sulfide	% solid																TCLP 8260							
1					1																								
2																						1							
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													

Abbreviations:

Gal GA = One gallon amber
32oz N/M GA = 32 oz Amberglass
VOA = 40mL vials
32oz W/M GA = 32 oz Wide Mouth Amberglass

1L HDPE = 1L (1000mL) Plastic Bottle
500mL HDPE = 500mL Plastic Bottle
250mL HPDE = 250mL Plastic Bottle

8oz GC = 8oz Soil Jar
4oz GC = 4oz Soil Jar
2oz GC = 2oz soil jar

120mL Plastic w. Pill = BacT
Zip = Ziplock Bag
4oz Plastic = 4oz Plastic Bottle

HCl = Hydrochloric Acid
H2SO4 = Sulfuric Acid
NaOH = Sodium Hydroxide
MeOH = Methanol
HNO3 = Nitric Acid
ZnAC = Zinc Acetate
Na2S2O3 = Sodium Thiosulfate

NH4Cl2 = Ammonium Chloride
DI H2O = DI Water
MCAA = Monochloroacetic Acid

Reviewed By: ____________________

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: City of Sunrise

Date/ Time Received: 03/02/2011 12:45:00 PM

Work Order #: 408378

Acceptable Temperature Range: 0 - 6 degC

Temperature Measuring device used :

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles/ container?	Yes	
#6 *Custody Seals Signed and dated for Containers/coolers	Yes	
#7 *Chain of Custody present?	Yes	
#9 Any missing/extra samples?	Yes	
#10 Chain of Custody signed when relinquished/ received?	Yes	
#11 Chain of Custody agrees with sample label(s)?	Yes	
#12 Container label(s) legible and intact?	Yes	
#13 Sample matrix/ properties agree with Chain of Custody?	Yes	
#14 Samples in proper container/ bottle?	Yes	
#15 Samples properly preserved?	Yes	
#16 Sample container(s) intact?	Yes	
#17 Sufficient sample amount for indicated test(s)?	Yes	
#18 All samples received within hold time?	Yes	
#19 Subcontract of sample(s)?	Yes	
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes	
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes	
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	Yes	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **DateTime :** _____

Checklist completed by: _____ Date: 03/02/2011
Roderick E. McHenry

Checklist reviewed by: _____ Date: 03/02/2011

APPENDIX C

MONARCH HILL LANDFILL SAMPLING DATA

Air TECHNOLOGY Laboratories, Inc.

June 11, 2013

ADE-1461
EPA Methods TO-3, TO14A,TO15 SIM & Scan, ASTM D1946

LA Cert 04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175

TX Cert T104704450-09-TX
EPA Methods TO14A, TO15

Carlson Environmental Consultants
ATTN: Seth Nunes
305 S. Main St.
Monroe, NC 28112

LABORATORY TEST RESULTS

Project Reference: Monarch Landfill
Lab Number: E052204-01

Enclosed are results for sample(s) received 5/22/13 by Air Technology Laboratories. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Seth Nunes and Lindsey Kennelly on 6/11/13.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

Total Number of Pages: 246

Client: Carlson Environmental Consultants
Attn: Seth Nunes
Project Name: Monarch Landfill
Project No.: NA
Date Received: 05/22/13
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	E052204-01							
Client Sample I.D.:	Monarch N Flare							
Date Sampled:	05/17/13							
Date Analyzed:	06/04/13							
QC Batch No.:	130603MS2A2							
Analyst Initials:	DT							
Dilution Factor:	110							
ANALYTE	Result ppbv	RL ppbv						
Dichlorodifluoromethane (12)	130	110						
Chloromethane	ND	210						
1,2-Cl-1,1,2,2-F ethane (114)	ND	110						
Vinyl Chloride	ND	110						
Bromomethane	120	110						
Chloroethane	ND	110						
Trichlorofluoromethane (11)	ND	110						
1,1-Dichloroethene	ND	110						
Carbon Disulfide	700	530						
1,1,2-Cl 1,2,2-F ethane (113)	ND	110						
Acetone	20,000	530						
Methylene Chloride	130	110						
t-1,2-Dichloroethene	ND	110						
1,1-Dichloroethane	ND	110						
Vinyl Acetate	ND	530						
c-1,2-Dichloroethene	ND	110						
2-Butanone	15,000	110						
t-Butyl Methyl Ether (MTBE)	ND	110						
Chloroform	ND	110						
1,1,1-Trichloroethane	ND	110						
Carbon Tetrachloride	ND	110						
Benzene	4,000	110						
1,2-Dichloroethane	ND	110						
Trichloroethene	ND	110						
1,2-Dichloropropane	ND	110						
Bromodichloromethane	ND	110						
c-1,3-Dichloropropene	ND	110						
4-Methyl-2-Pentanone	1,300	110						
Toluene	6,600	110						
t-1,3-Dichloropropene	ND	110						
1,1,2-Trichloroethane	ND	110						
Tetrachloroethene	ND	110						

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Carlson Environmental Consultants**
Attn:	**Seth Nunes**
Project Name:	**Monarch Landfill**
Project No.:	**NA**
Date Received:	**05/22/13**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	E052204-01							
Client Sample I.D.:	Monarch N Flare							
Date Sampled:	05/17/13							
Date Analyzed:	06/04/13							
QC Batch No.:	130603MS2A2							
Analyst Initials:	DT							
Dilution Factor:	110							
ANALYTE	**Result ppbv**	**RL ppbv**						
2-Hexanone	130	110						
Dibromochloromethane	ND	110						
1,2-Dibromoethane	ND	110						
Chlorobenzene	120	110						
Ethylbenzene	2,800	110						
p,&m-Xylene	4,400	110						
o-Xylene	1,300	110						
Styrene	130	110						
Bromoform	ND	110						
1,1,2,2-Tetrachloroethane	ND	210						
Benzyl Chloride	ND	110						
4-Ethyl Toluene	670	110						
1,3,5-Trimethylbenzene	280	210						
1,2,4-Trimethylbenzene	360	210						
1,3-Dichlorobenzene	ND	110						
1,4-Dichlorobenzene	ND	110						
1,2-Dichlorobenzene	ND	110						
1,2,4-Trichlorobenzene	ND	210						
Hexachlorobutadiene	ND	110						
TPH as Gasoline	300,000	11,000						

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 6/4/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Carlson Environmental Consultants
Attn: Seth Nunes
Project Name: Monarch Landfill
Project No.: NA
Date Received: 05/22/13
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	E052204-01
Client Sample I.D.:	Monarch N Flare
Date Sampled:	05/17/13
Date Analyzed:	06/04/13
QC Batch No.:	130603MS2A2
Analyst Initials:	DT
Dilution Factor:	110

ANALYTE	Result ppbv	RL ppbv
Hexamethyldisiloxane (L2, MM)	ND	1,100
Hexamethylcyclotrisiloxane (D3)	ND	1,100
Octamethyltrisiloxane (L3, MDM)	ND	1,100
Octamethylcyclotetrasiloxane (D4)	2,900	1,100
Decamethyltetrasiloxane (L4, MD2M)	ND	1,100
Decamethylcyclopentasiloxane (D5)	ND	5,300
Dodecamethylpentasiloxane (L5, MD3M)	ND	21,000

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 6/11/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 130603MS2A2

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date Analyzed:	06/04/13		06/03/13		06/04/13						
Data File ID:	03JUN010.D		03JUN006.D		03JUN007.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	9.5	95	9.3	93	2.0	70	130	30	Pass
Methylene Chloride	0.0	10.0	9.5	95	9.3	93	2.5	70	130	30	Pass
Trichloroethene	0.0	10.0	9.1	91	9.0	90	1.0	70	130	30	Pass
Toluene	0.0	10.0	8.8	88	9.3	93	6.4	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	9.7	97	9.2	92	5.1	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 6/11/13

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: Carlson Environmental Consultants
Attn: Seth Nunes
Project Name: Monarch Landfill
Project No.: NA
Date Received: 05/22/13
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	E052204-01
Client Sample I.D.:	Monarch N Flare
Date Sampled:	05/17/13
Date Analyzed:	05/22/13
QC Batch No.:	130521GC3A1
Analyst Initials:	VM
Dilution Factor:	2.7

ANALYTE	Result ppmv	RL ppmv
Hydrogen Sulfide	670	53
Carbonyl Sulfide	3.0	0.53
Methyl Mercaptan	6.9	0.53
Ethyl Mercaptan	0.67	0.53
Dimethyl Sulfide	9.9	0.53
Carbon Disulfide	ND	0.53
Dimethyl Disulfide	ND	0.53
Total Reduced Sulfur	690	0.55

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 6/11/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 130521GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date Analyzed:	05/21/13		05/21/13		05/21/13			
Analyst Initials:	VM		VM		VM			
Datafile:	21MAY004		21MAY001		21MAY003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	83	70-130%	94	70-130%	11.9	<30
Carbonyl Sulfide	ND	0.20	93	70-130%	98	70-130%	4.2	<30
Methyl Mercaptan	ND	0.20	84	70-130%	88	70-130%	5.1	<30
Ethyl Mercaptan	ND	0.20	100	70-130%	111	70-130%	10.7	<30
Dimethyl Sulfide	ND	0.20	91	70-130%	103	70-130%	12.2	<30
Carbon Disulfide	ND	0.20	82	70-130%	88	70-130%	7.2	<30
Dimethyl Disulfide	ND	0.20	90	70-130%	94	70-130%	4.1	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 6/11/13
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: Carlson Environmental Consultants
Attn: Seth Nunes

Project Name: Monarch Landfill
Project Number: NA
Date Received: 5/22/2013
Matrix: Vapor

Fixed Gases by EPA METHOD 3C

Lab Number:	E052204-01			
Client Sample ID:	Monarch N Flare			
Date Collected:	5/17/2013			
Date Analyzed:	5/22/2013			
Analyst Initials:	MJ			
QC Batch:	130522GC8A1			
Dilution Factor:	2.6			

ANALYTE	Units	PQL	Result	RL
Nitrogen	% v/v	1.0	13	2.6
Oxygen	% v/v	0.50	1.7	1.3
Carbon Dioxide	% v/v	0.010	36	0.026
Methane	% v/v	0.0010	51	0.0026

ND = Not detected at or above reporting limit.
PQL = Practical Quantitation Limit.
No moisture correction.

Reviewed/Approved By: _____ Date: 6-10-13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates Inc.
6026 NW 1st Place
Gainesville, FL 32607 USA
Tel: (352) 336-5600
Fax: (352) 336-6603

Golder Associates